

Subject :Accounting for Managers

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Course Code : CP-104

Lesson No. : 1

**FINANCIAL ACCOUNTING : MEANING, NATURE AND ROLE
OF ACCOUNTING**

STRUCTURE

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1.0 OBJECTIVE

After reading this lesson, you should be able to

- (a) Define accounting and trace the origin and growth of accounting.
- (b) Distinguish between book-keeping and accounting.
- (c) Explain the nature and objectives of accounting.
- (d) Discuss the branches, role and limitations of accounting.

1.1 INTRODUCTION

Accounting has rightly been termed as the language of the business. The basic function of a language is to serve as a means of communication. Accounting also serves this function. It communicates the results of business operations to various parties who have some stake in the business viz., the proprietor, creditors, investors, Government and other agencies. Though accounting is generally associated with business but it is not only business which makes use of accounting. Persons like housewives, Government and other individuals also make use of a accounting. For example, a housewife has to keep a record of the money received and spent by her during a particular period. She can record her receipts of money on one page of her "household diary" while payments for different items such as milk, food, clothing, house, education etc. on some other page or pages of her diary in a chronological order. Such a record will help her in knowing about :

- (i) The sources from which she received cash and the purposes for which it was utilised.
- (ii) Whether her receipts are more than her payments or vice-versa?
- (iii) The balance of cash in hand or deficit, if any at the end of a period.

In case the housewife records her transactions regularly, she can collect valuable information about the nature of her receipts and payments. For example, she can find out the total amount spent by her during a period (say a year) on different items say milk, food, education, entertainment, etc. Similarly she can find the sources of her receipts such as salary of her husband, rent from property, cash gifts from her relatives, etc. Thus, at the end of a period (say a year) she can see for herself about her financial position i.e., what she owns and what she owes. This will help her in planning her future income and expenses (or making out a budget) to a great extent.

The need for accounting is all the more great for a person who is running a business. He must know : (i) What he owns? (ii) What he owes? (iii) Whether he has earned a profit or suffered a loss on account of running a business? (iv) What is his financial position i.e. whether he will be in a position to meet all his commitments in the near future or he is in the process of becoming a bankrupt.

1.2 ORIGIN AND GROWTH OF ACCOUNTING

Accounting is as old as money itself. However, the act of accounting was not as developed as it is today because in the early stages of civilisation, the number of transactions to be recorded were so small that each businessman was able to record and check for himself all his transactions. Accounting was practised in India twenty three centuries ago as is clear from the book named "Arthashastra" written by Kautilya, King Chandragupta's minister. This book not only relates to politics and economics, but also explains the art of proper keeping of accounts. However, the modern system of accounting based on the principles of double entry system owes its origin to Luca Pacioli who first published the principles of Double Entry System in 1494 at Venice in Italy. Thus, the art of accounting has been practised for centuries but it is only in the late thirties that the study of the subject 'accounting' has been taken up seriously.

1.3 MEANING OF ACCOUNTING

The main purpose of accounting is to ascertain profit or loss during a specified period, to show financial condition of the business on a particular date and to have control over the firm's property. Such accounting records are required to be maintained to measure the income of the business and communicate the information so that it may be used by managers, owners and other interested parties. Accounting is a discipline which records, classifies, summarises and interprets financial information about the activities of a concern so that intelligent decisions can be made about the concern. *The American Institute of Certified Public Accountants* has defined the Financial Accounting as "the art of recording, classifying and summarising in as significant manner and in terms of money transactions and events which in part, at least of a financial character, and interpreting the results thereof". *American Accounting Association* defines accounting as "the process of identifying, measuring, and communicating economic information to permit informed judgements and decisions by users of the information.

From the above the following attributes of accounting emerge :

- (i) **Recording** : It is concerned with the recording of financial transactions in an orderly manner, soon after their occurrence In the proper books of accounts.
- (ii) **Classifying** : It Is concerned with the systematic analysis of the recorded data so as to accumulate the transactions of similar type at one place. This function is performed by maintaining the ledger in which different accounts are opened to which related transactions are posted.
- (iii) **Summarising** : It is concerned with the preparation and presentation of the classified data in a manner useful to the users. This function involves the

preparation of financial statements such as Income Statement, Balance Sheet, Statement of Changes in Financial Position, Statement of Cash Flow, Statement of Value Added.

(iv) **Interpreting** : Nowadays, the aforesaid three functions are performed by electronic data processing devices and the accountant has to concentrate mainly on the interpretation aspects of accounting. The accountants should interpret the statements in a manner useful to action. The accountant should explain not only what has happened but also (a) why it happened, and (b) what is likely to happen under specified conditions.

1.4 DISTINCTION BETWEEN BOOK-KEEPING AND ACCOUNTING

Book-keeping is a part of accounting and is concerned with the recording of transactions which is often routine and clerical in nature, whereas accounting performs other functions as well, viz., measurement and communication, besides recording. An accountant is required to have a much higher level of knowledge, conceptual understanding and analytical skill than is required of the book-keeper.

An accountant designs the accounting system, supervises and checks the work of the book-keeper, prepares the reports based on the recorded data and interprets the reports. Nowadays, he is required to take part in matters of management, control and planning of economic resources.

1.5 DISTINCTION BETWEEN ACCOUNTING AND ACCOUNTANCY

Although in practice Accountancy and Accounting are used interchangeably yet there is a thin line of demarcation between them. The word Accountancy is used for the profession of accountants - who do the work of accounting and are knowledgeable persons. Accounting is concerned with

recording all business transactions systematically and then arranging in the form of various accounts and financial statements. And it is a distinct discipline like economics, physics, astronomy etc. The word accounting tries to explain the nature of the work of the accountants (professionals) and the word Accountancy refers to the profession these people adopt.

1.6 NATURE OF ACCOUNTING

The various definitions and explanations of accounting has been propounded by different accounting experts from time to time and the following aspects comprise the nature of accounting :

i) Accounting as a service activity

Accounting is a service activity. Its function is to provide quantitative information, primarily financial in nature, about economic entities that is intended to be useful in making economic decisions, in making reasoned choices among alternative courses of action. It means that accounting collects financial information for the various users for taking decisions and tackling business issues. Accounting in itself cannot create wealth though, if it produces information which is useful to others, it may assist in wealth creation and maintenance.

(ii) Accounting as a profession

Accounting is very much a profession. A profession is a career that involve the acquiring of a specialised formal education before rendering any service. Accounting is a systematized body of knowledge developed with the development of trade and business over the past century. The accounting education is being imparted to the examinees by national and international recognised the bodies like The Institute of Chartered Accountants of India (ICAI), New Delhi in India and American Institute of Certified Public Accountants (AICPA) in USA

etc. The candidate must pass a vigorous examination in Accounting Theory, Accounting Practice, Auditing and Business Law. The members of the professional bodies usually have their own associations or organisations, where in they are required to be enrolled compulsorily as Associate member of the Institute of Chartered Accountants (A.C.A.) and fellow of the Institute of Chartered Accountants (F.C.A.). In a way, accountancy as a profession has attained the stature comparable with that of lawyer, medicine or architecture.

(iii) Accounting as a social force

In early days, accounting was only to serve the interest of the owners. Under the changing business environment the discipline of accounting and the accountant both have to watch and protect the interests of other people who are directly or indirectly linked with the operation of modern business. The society is composed of people as customer, shareholders, creditors and investors. The accounting information/data is to be used to solve the problems of the public at large such as determination and controlling of prices. Therefore, safeguarding of public interest can better be facilitated with the help of proper, adequate and reliable accounting information and as a result of it the society at large is benefited.

(iv) Accounting as a language

Accounting is rightly referred the "language of business". It is one means of reporting and communicating information about a business. As one has to learn a new language to converse and communicate, so also accounting is to be learned and practised to communicate business events.

A language and accounting have common features as regards rules and symbols. Both are based and propounded on fundamental rules and symbols. In language these are known as grammatical rules and in accounting, these are

termed as accounting rules. The expression, exhibition and presentation of accounting data such as a numerals and words and debits and credit are accepted as symbols which are unique to the discipline of accounting.

(v) Accounting as science or art

Science is a systematised body of knowledge. It establishes a relationship of cause and effect in the various related phenomenon. It is also based on some fundamental principles. Accounting has its own principles e.g. the double entry system, which explains that every transaction has two fold aspect i.e. debit and credit. It also lays down rules of journalising. So we can say that accounting is a science.

Art requires a perfect knowledge, interest and experience to do a work efficiently. Art also teaches us how to do a work in the best possible way by making the best use of the available resources. Accounting is an art as it also requires knowledge, interest and experience to maintain the books of accounts in a systematic manner. Everybody cannot become a good accountant. It can be concluded from the above discussion that accounting is an art as well as a science.

(vi) Accounting as an information system

Accounting discipline will be the most useful one in the acquisition of all the business knowledge in the near future. You will realise that people will be constantly exposed to accounting information in their everyday life. Accounting information serves both profit-seeking business and non-profit organisations. The accounting system of a profit-seeking organisation is an information system designed to provide relevant financial information on the resources of a business and the effect of their use. Information is relevant and valuable if the decision makers can use it to evaluate the financial consequences of various alternatives.

Accounting generally does not generate the basic information (raw financial data), rather the raw financial data result from the day to day transactions of the business.

As an information system, accounting links an information source or transmitter (generally the accountant), a channel of communication (generally the financial statements) and a set of receivers (external users).

1.7 OBJECTIVES OF ACCOUNTING

The following are the main objectives of accounting :

1. **To keep systematic records :** Accounting is done to keep a systematic record of financial transactions. In the absence of accounting there would have been terrific burden on human memory which in most cases would have been impossible to bear.
2. **To protect business properties :** Accounting provides protection to business properties from unjustified and unwarranted use. This is possible on account of accounting supplying the following information to the manager or the proprietor:
 - (i) The amount of the proprietor's funds invested in the business.
 - (ii) How much the business have to pay to others?
 - (iii) How much the business has to recover from others?
 - (iv) How much the business has in the form of (a) fixed assets, (b) cash in hand, (c) cash at bank, (d) stock of raw materials, work-in-progress and finished goods?

Information about the above matters helps the proprietor in assuring that the funds of the business are not necessarily kept idle or underutilised.

3. **To ascertain the operational profit or loss :** Accounting helps in ascertaining the net profit earned or loss suffered on account of carrying the business. This is done by keeping a proper record of revenues and expense of a particular period. The Profit and Loss Account is prepared at the end of a period and if the amount of revenue for the period is more than the expenditure incurred in earning that revenue, there is said to be a profit. In case the expenditure exceeds the revenue, there is said to be a loss.

Profit and Loss Account will help the management, investors, creditors, etc. in knowing whether the business has proved to be remunerative or not. In case it has not proved to be remunerative or profitable, the cause of such a state of affairs will be investigated and necessary remedial steps will be taken.

4. **To ascertain the financial position of the business :** The Profit and Loss Account gives the amount of profit or loss made by the business during a particular period. However, it is not enough. The businessman must know about his financial position i.e. where he stands ?, what he owes and what he owns? This objective is served by the Balance Sheet or Position Statement. The Balance Sheet is a statement of assets and liabilities of the business on a particular date. It serves as barometer for ascertaining the financial health of the business.

5. **To facilitate rational decision making :** Accounting these days has taken upon itself the task of collection, analysis and reporting of information at the required points of time to the required levels of authority in order to facilitate rational decision-making. The American Accounting Association has also stressed this point while defining the term accounting when it says that accounting is the process of identifying, measuring and communicating economic information to permit informed judgements and decisions by users of the information. Of course, this is by no means an easy task. However, the accounting bodies all over the

world and particularly the International Accounting Standards Committee, have been trying to grapple with this problem and have achieved success in laying down some basic postulates on the basis of which the accounting statements have to be prepared.

6. **Information System :** Accounting functions as an information system for collecting and communicating economic information about the business enterprise. This information helps the management in taking appropriate decisions. This function, as stated, is gaining tremendous importance these days.

1.8 USERS OF ACCOUNTING INFORMATION

The basic objective of accounting is to provide information which is useful for persons inside the organisation and for persons or groups outside the organisation. Accounting is the discipline that provides information on which external and internal users of the information may base decisions that result in the allocation of economic resources in society.

I. External Users of Accounting Information : External users are those groups or persons who are outside the organisation for whom accounting function is performed. Following can be the various external users of accounting information:

1. *Investors,* Those who are interested in investing money in an organisation are interested in knowing the financial health of the organisation of know how safe the investment already made is and how safe their proposed investment will be. To know the financial health, they need accounting information which will help them in evaluating the past performance and future prospects of the organisation. Thus, investors for their investment decisions are dependent upon accounting information included in the financial statements. They can know the profitability and the financial position of the organisation in which they are

interested to make that investment by making a study of the accounting information given in the financial statements of the organisation.

2. *Creditors.* Creditors (i.e. supplier of goods and services on credit, bankers and other lenders of money) want to know the financial position of a concern before giving loans or granting credit. They want to be sure that the concern will not experience difficulty in making their payment in time i.e. liquid position of the concern is satisfactory. To know the liquid position, they need accounting information relating to current assets, quick assets and current liabilities which is available in the financial statements.

3. *Members of Non-profit Organisations.* Members of non-profit organisations such as schools, colleges, hospitals, clubs, charitable institutions etc. need accounting information to know how their contributed funds are being utilised and to ascertain if the organisation deserves continued support or support should be withdrawn keeping in view the bad performance depicted by the accounting information and diverted to another organisation. In knowing the performance of such organisations, criterion will not be the profit made but the main criterion will be the service provided to the society.

4. *Government.* Central and State Governments are interested in the accounting information because they want to know earnings or sales for a particular period for purposes of taxation. Income tax returns are examples of financial reports which are prepared with information taken directly from accounting records. Governments also needs accounting information for compiling statistics concerning business which, in turn helps in compiling national accounts.

5. *Consumers.* Consumers need accounting information for establishing good accounting control so that cost of production may be reduced with the resultant

reduction of the prices of goods they buy. Sometimes, prices for some goods are fixed by the Government, so it needs accounting information to fix reasonable prices so that consumers and manufacturers are not exploited. Prices are fixed keeping in view fair return to manufacturers on their investments shown in the accounting records.

6. *Research Scholars.* Accounting information, being a mirror of the financial performance of a business organisation, is of immense value to the research scholars who want to make a study to the financial operations of a particular firm. To make a study into the financial operations of a particular firm, the research scholar needs detailed accounting information relating to purchases, sales, expenses, cost of materials used, current assets, current liabilities, fixed assets, long term liabilities and shareholders' funds which is available in the accounting records maintained by the firm.

II Internal Users of Accounting Information. Internal users of accounting information are those persons or groups which are within the organisation. Following are such internal users :

1. *Owners.* The owners provide funds for the operations of a business and they want to know whether their funds are being properly used or not. They need accounting information to know the profitability and the financial position of the concern in which they have invested their funds. The financial statements prepared from time to time from accounting records depicts them the profitability and the financial position.

2. *Management.* Management is the art of getting work done through others, the management should ensure that the subordinates are doing work properly. Accounting information is an aid in this respect because it helps a manager in appraising the performance of the subordinates. Actual performance of the

employees can be compared with the budgeted performance they were expected to achieve and remedial action can be taken if the actual performance is not upto the mark. Thus, accounting information provides "the eyes and ears to management".

The most important functions of management are planning and controlling. Preparation of various budgets, such as sales budget, production budget, cash budget, capital expenditure budget etc., is an important part of planning function and the starting point for the preparation of the budgets is the accounting information for the previous year. Controlling is the function of seeing that programmes laid down in various budgets are being actually achieved i.e. actual performance ascertained from accounting is compared with the budgeted performance, enabling the manager to exercise controlling case of weak performance. Accounting information is also helpful to the management in fixing reasonable selling prices. In a competitive economy, a price should be based on cost plus a reasonable rate of return. If a firm quotes a price which exceeds cost plus a reasonable rate of return, it probably will not get the order. On the other hand, if the firm quotes a price which is less than its cost, it will be given the order but will incur a loss on account of price being lower than the cost. So, selling prices should always be fixed on the basis of accounting data to get the reasonable margin of profit on sales.

3. *Employees.* Employees are interested in the financial position of a concern they serve particularly when payment of bonus depends upon the size of the profits earned. They seek accounting information to know that the bonus being paid to them is correct.

1.9 BRANCHES OF ACCOUNTING

To meet the ever increasing demands made on accounting by different

interested parties such as owners, management, creditors, taxation authorities etc., the various branches have come into existence. There are as follows :

1. *Financial accounting.* The object of financial accounting is to ascertain the results (profit or loss) of business operations during the particular period and to state the financial position (balance sheet) as on a date at the end of the period.
2. *Cost accounting.* The object of cost accounting is to find out the cost of goods produced or services rendered by a business. It also helps the business in controlling the costs by indicating avoidable losses and wastes.
3. *Management accounting.* The object of management accounting is to supply relevant information at appropriate time to the management to enable it to take decisions and effect control.

In this lesson we are concerned only with financial accounting. Financial accounting is the oldest and other branches have developed from it. The objects of financial accounting, as stated above, can be achieved only by recording the financial transactions in a systematic manner according to a set of principles. The art of recording financial transactions and events in a systematic manner in the books of account is known as book-keeping. However, mere record of transactions is not enough. The recorded information has to be classified, analysed and presented in a manner in which business results and financial position can be ascertained.

1.10 ROLE OF ACCOUNTING

Accounting plays an important and useful role by developing the information for providing answers to many questions faced by the users of accounting information :

- (1) How good or bad is the financial condition of the business?
- (2) Has the business activity resulted in a profit or loss ?
- (3) How well the different departments of the business have performed in the past?
- (4) Which activities or products have been profitable?
- (5) Out of the existing products which should be discontinued and the production of which commodities should be increased?
- (6) Whether to buy a component from the market or to manufacture the same?
- (7) Whether the cost of production is reasonable or excessive?
- (8) What has been the impact of existing policies on the profitability of the business?
- (9) What are the likely results of new policy decisions on future earning capacity of the business?
- (10) In the light of past performance of the business how should it plan for future to ensure desired results?

Above mentioned are few examples of the types of questions faced by the users of accounting information. These can be satisfactorily answered with the help of suitable and necessary information provided by accounting.

Besides, accounting is also useful in the following respects :

- (a) Increased volume of business results in large number of transactions and no businessman can remember everything. Accounting records obviate the necessity of remembering various transactions.

- (b) Accounting records, prepared on the basis of uniform practices, will enable a business to compare results of one period with another period.
- (c) Taxation authorities (both income tax and sales tax) are likely to believe the facts contained in the set of accounting books if maintained according to generally accepted accounting principles.
- (d) Accounting records, backed up by proper and authenticated vouchers, are good evidence in a court of law.
- (e) If a business is to be sold as a going concern, then the values of different assets as shown by the balance sheet helps in bargaining proper price for the business.

1.11 LIMITATIONS OF FINANCIAL ACCOUNTING

Advantages of accounting discussed in this lesson do not suggest that accounting is free from limitations. Any one who is using accounting information should be well aware of its limitations also. Following are the limitations :

- (a) Financial accounting permits alternative treatments

No doubt accounting is based on concepts and it follows "generally accepted accounting principles", but there exist more than one principle for the treatment of any one item. This permits alternative treatments within the framework of generally accepted accounting principles. For example, the closing stock of a business may be valued by any one of the following methods : FIFO (First-in-first-out); LIFO (Last-in-first-out); Average price, Standard price etc., Application of different methods will give different results but the methods are generally accepted. So, the results are not comparable.

- (b) Financial accounting is Influenced by personal judgements

In spite of the fact that convention of objectivity is respected in accounting but to record certain events estimates have to be made which requires personal judgement. It is very difficult to expect accuracy in future estimates and objectivity suffers. For example, in order to determine the amount of depreciation to be charged every year for the use of fixed asset it is required to estimate (a) future life of the asset, and (b) scrap value of the asset. Thus in accounting we do not determine but measure the income. In other words, the income disclosed by accounting is not authoritative but approximation.

(c) Financial accounting ignores important non-monetary information

Financial accounting takes into consideration only those transactions and events which can be described in money. The transactions and events, however important, if non-monetary in nature are ignored i.e., not recorded. For example, extent of competition faced by the business, technical innovations possessed by the business, loyalty and efficiency of the employees etc. are the important matters in which management of the business is highly interested but accounting is not tailored to take note of such matters. Thus any user of financial information is, naturally, deprived of vital information which is of non-monetary character.

(d) Financial accounting does not provide timely information

Financial accounting is designed to supply information in the form of statements (Balance Sheet and Profit and Loss Account) for a period, normally, one year. So the information is, at best, of historical interest and only postmortem analysis of the past can be conducted. The business requires timely information at frequent intervals to enable the management to plan and take corrective action. For example, if a business has budgeted that during the current year sales should be Rs. 12,00,000 then it requires information – whether the sales in the first month of the year amounted to Rs. 1,00,000 or less or more? Traditionally,

financial accounting is not supposed to supply information at shorter intervals than one year.

(e) Financial accounting does not provide detailed analysis

The information supplied by the financial accounting is in reality aggregate of the financial transactions during the course of the year. Of course, it enables to study the overall results of the business activity during the accounting period. For proper running of the business the information is required regarding the cost, revenue and profit of each product but financial accounting does not provide such detailed information product-wise. For example, if a business has earned a total profit of, say, Rs. 5,00,000 during the accounting year and it sells three products namely petrol, diesel and mobile oil and wants to know profit earned by each product. Financial accounting is not likely to help him.

(f) Financial accounting does not disclose the present value of the business

In financial accounting the position of the business as on a particular date is shown by a statement known as balance sheet. In balance sheet the assets are shown on the basis of going concern concept. Thus it is presumed that business has relatively longer life and will continue to exist indefinitely, hence the asset values are going concern values. The realised value of each asset if sold today can't be known by studying the balance sheet.

1.12 SYSTEMS OF ACCOUNTING

The following are the main systems of recording business transactions:

(a) *Cash System.* Under this system, actual cash receipts and actual cash payments are recorded. Credit transactions are not recorded at all until the cash is actually received or paid. The Receipts and Payments Account prepared in case

of non-trading concerns such as a charitable institution, a club, a school, a college, etc. and professional men like a lawyer, a doctor, a chartered accountant etc. can be cited as the best example of cash system. This system does not make a complete record of financial transactions of a trading period as it does not record outstanding transactions like outstanding expenses and outstanding incomes. The system being based on a record of actual cash receipts and actual cash payments will not be able to disclose correct profit or loss for a particular period and will not exhibit true financial position of the business on a particular day.

(b) *Mercantile (Accrual) system.* Under this system all transactions relating to a period are recorded in the books of account i.e., in addition to actual receipts and payments of cash income receivable and expenses payable are also recorded. This system gives a complete picture of the financial transactions of the business as it makes a record of all transactions relating to a period. The system being based on a complete record of the financial transactions discloses correct profit or loss for a particular period and also exhibits true financial position of the business on a particular day.

1.13 SUMMARY

Accounting can be understood as the language of financial decisions. It is an ongoing process of performance measurement and reporting the results to decision makers. The discipline of accounting can be traced back to very early times of human civilization. With the advancement of industry, modern day accounting has become formalized and structured. A person who maintains accounts is known as the accountant. The information generated by accounting is used by various interested groups like, individuals, managers, investors, creditors, government, regulatory agencies, taxation authorities, employee, trade unions, consumers and general public. Depending upon purpose and method, accounting

can be broadly three types; financial accounting, cost accounting and management accounting. Financial accounting is primarily concerned with the preparation of financial statements. It is used on certain well-defined concepts and conventions and helps in framing broad financial policies. However, it suffers from certain limitations.

1.14 KEYWORDS

Book-keeping: It is the art of recording in the books of accounts the monetary aspect of commercial or financial transactions.

Accounting: It is the means of collecting, summarising and reporting in monetary terms, information about the business.

Financial accounting: Financial accounting deals with the maintenance of books of accounts with a view to ascertain the profitability and the financial status of the business.

Transaction: A transaction is a stimulus from one person and a related response from the another.

1.15 SELF ASSESSMENT QUESTIONS

1. Define accounting. Discuss the objectives of accounting.
2. What are the various interested parties which use accounting information?
3. What is meant by book-keeping and accounting? Is accounting a science or art?
4. Briefly describe the various branches of accounting.
5. Distinguish between :
 - (a) Accounting and Accountancy
 - (b) Cash and Mercantile System of Accounting

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Lesson : 2

ACCOUNTING CONCEPTS AND CONVENTIONS

STRUCTURE

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2.0 OBJECTIVE

After studying this lesson, you should be able :

- (a) to know the need for a conceptual frame work of accounting;
- (b) to understand and describe the generally accepted accounting principles (GAAP); and
- (c) to appreciate the importance and advantages of uniformity in accounting policies and practices.

2.1 INTRODUCTION

Accounting is often called the language of business because the purpose of accounting is to communicate or report the results of business operations and its various aspects to various users of accounting information. In fact, today, accounting statements or reports are needed by various groups such as shareholders, creditors, potential investors, columnist of financial newspapers, proprietors and others. In view of the utility of accounting reports to various interested parties, it becomes imperative to make this language capable of commonly understood by all. Account-

ing could become an intelligible and commonly understood language if it is based on generally accepted accounting principles. Hence, you must be familiar with the accounting principles behind financial statements to understand and use them properly.

2.2 MEANING AND FEATURES OF ACCOUNTING PRINCIPLES

For searching the goals of the accounting profession and for expanding knowledge in this field, a logical and useful set of principles and procedures are to be developed. We know that while driving our vehicles, follow a standard traffic rules. Without adhering traffic rules, there would be much chaos on the road. Similarly, some principles apply to accounting. Thus, the accounting profession cannot reach its goals in the absence of a set rules to guide the efforts of accountants and auditors. The rules and principles of accounting are commonly referred to as the conceptual framework of accounting.

Accounting principles have been defined by the Canadian Institute of Chartered Accountants as “The body of doctrines commonly associated with the theory and procedure of accounting serving as an explanation of current practices and as a guide for the selection of conventions or procedures where alternatives exists. Rules governing the formation of accounting axioms and the principles derived from them have arisen from common experience, historical precedent statements by individuals and professional bodies and regulations of Governmental agencies”. According to Hendriksen (1997), Accounting theory may be defined as logical reasoning in the form of a set of broad principles that (i) provide a general frame of reference by which accounting practice can be evaluated, and (ii) guide the development of new practices and procedures. Theory may also be used to explain existing practices to obtain a better understanding of them. But the most important goal of accounting theory should be to provide a coherent set of logi-

cal principles that form the general frame of reference for the evaluation and development of sound accounting practices.

The American Institute of Certified Public Accountants (AICPA) has advocated the use of the word "Principle" in the sense in which it means "rule of action". It discusses the generally accepted accounting principles as follows :

Financial statements are the product of a process in which a large volume of data about aspects of the economic activities of an enterprise are accumulated, analysed and reported. This process should be carried out in conformity with generally accepted accounting principles. These principles represent the most current consensus about how accounting information should be recorded, what information should be disclosed, how it should be disclosed, and which financial statement should be prepared. Thus, generally accepted principles and standards provide a common financial language to enable informed users to read and interpret financial statements.

Generally accepted accounting principles encompass the conventions, rules and procedures necessary to define accepted accounting practice at a particular time..... generally accepted accounting principles include not only broad guidelines of general application, but also detailed practices and procedures (Source : AICPA Statement of the Accounting Principles Board No. 4, "Basic Concepts and Accounting Principles underlying Financial Statements of Business Enterprises ", October, 1970, pp 54-55)

According to 'Dictionary of Accounting' prepared by Prof. P.N. Abroal, "Accounting standards refer to accounting rules and procedures which are relating to measurement, valuation and disclosure prepared by such bodies as the Accounting Standards Committee (ASC) of a particular country". Thus, we may define Accounting Principles as those rules of action or conduct which are

adopted by the accountants universally while recording accounting transactions. Accounting principles are man-made. They are accepted because they are believed to be useful. The general acceptance of an accounting principle usually depends on how well it meets the following three basic norms :

- a) Usefulness
- b) Objectiveness, and
- c) Feasibility

A principle is useful to the extent that it results in meaningful or relevant information to those who need to know about a certain business. In other words, an accounting rule, which does not increase the utility of the records to its readers, is not accepted as an accounting principles. A principle is objective to the extent that the information is not influenced by the personal bias or Judgement of those who furnished it. Accounting principle is said to be objective when it is solidly supported by facts. Objectivity means reliability which also means that the accuracy of the information reported can be verified. Accounting principles should be such as are practicable. A principle is feasible when it can be implemented without undue difficulty or cost. Although these three features are generally found in accounting principles, an optimum balance of three is struck in some cases for adopting a particular rule as an accounting principle. For example, the principle of making the provision for doubtful debts is found on feasibility and usefulness though it is less objective. This is because of the fact that such provisions are not supported by any outside evidence.

2.3 ACCOUNTING PRINCIPLES

In dealing with the framework of accounting theory, we are confronted with a serious problem arising from differences in terminology. A number of words and terms have been used by different authors to express and explain the same idea or notion. The various terms used for describing the basic ideas are: concepts, postulates, propositions, assumptions, underlying-

ing principles, fundamentals, conventions, doctrines, rules, axioms, etc. Each of these terms is capable of precise definition. But, the accounting profession has served to give them loose and overlapping meanings. One author may describe the same idea or notion as a concept and another as a convention and still another as postulate. For example, the separate business entity idea has been described by one author as a concept and by another as conventions. It is better for us not to waste our time to discuss the precise meaning of generic terms as the wide diversity in these terms can only serve to confuse the learner. We do feel, however, that some of these terms/ideas have a better claim to be called ‘concepts’ while the rest should be called ‘conventions’. The term ‘Concept’ is used to connote the accounting postulates, i.e., necessary assumptions and ideas which are fundamental to accounting practice. In other words, fundamental accounting concepts are broad general assumptions which underline the periodic financial statements of business enterprises. The reason why some of these terms should be called concepts is that they are basic assumptions and have a direct bearing on the quality of financial accounting information. The term ‘convention’ is used to signify customs or tradition as a guide to the preparation of accounting statements. The following are the important accounting concepts and conventions:

Accounting Concepts

- ◆ Separate Business Entity Concept
- ◆ Money Measurement Concept
- ◆ Dual Aspect Concept
- ◆ Going Concern Concept
- ◆ Accounting Period Concept
- ◆ Cost Concept
- ◆ The Matching Concept

Accounting Conventions

- ◆ Convention of Materiality
- ◆ Convention of Conservatism
- ◆ Convention of consistency

- ◆ Accrual Concept
- ◆ Realisation Concept

2.4 ACCOUNTING CONCEPTS

The more important accounting concepts are briefly described as follows:

1. Separate Business Entity Concept. In accounting we make a distinction between business and the owner. All the books of accounts records day to day financial transactions from the view point of the business rather than from that of the owner. The proprietor is considered as a creditor to the extent of the capital brought in business by him. For instance, when a person invests Rs. 10 lakh into a business, it will be treated that the business has borrowed that much money from the owner and it will be shown as a 'liability' in the books of accounts of business. Similarly, if the owner of a shop were to take cash from the cash box for meeting certain personal expenditure, the accounts would show that cash had been reduced even though it does not make any difference to the owner himself. Thus, in recording a transaction the important question is how does it affects the business ? For example, if the owner puts cash into the business, he has a claim against the business for capital brought in.

In sofar as a limited company is concerned, this distinction can be easily maintained because a company has a legal entity of its own. Like a natural person it can engage itself in economic activities of buying, selling, producing, lending, borrowing and consuming of goods and services. However, it is difficult to show this distinction in the case of sole proprietorship and partnership. Nevertheless, accounting still maintains separation of business and owner. It may be noted that it is only for accounting purpose that partnerships and sole proprietorship are treated as separate from the owner (s), though law does not make such distinction. Infact, the business entity concept is applied to make it possible for the owners to assess the performance of their business and performance of those whose manage the enterprise.

The managers are responsible for the proper use of funds supplied by owners, banks and others.

2. Money Measurement Concept. In accounting, only those business transactions are recorded which can be expressed in terms of money. In other words, a fact or transaction or happening which cannot be expressed in terms of money is not recorded in the accounting books. As money is accepted not only as a medium of exchange but also as a store of value, it has a very important advantage since a number of assets and equities, which are otherwise different, can be measured and expressed in terms of a common denominator.

We must realise that this concept imposes two limitations. Firstly, there are several facts which though very important to the business, cannot be recorded in the books of accounts because they cannot be expressed in money terms. For example, general health condition of the Managing Director of the company, working conditions in which a worker has to work, sales policy pursued by the enterprise, quality of product introduced by the enterprise, though exert a great influence on the productivity and profitability of the enterprise, are not recorded in the books. Similarly, the fact that a strike is about to begin because employees are dissatisfied with the poor working conditions in the factory will not be recorded even though this event is of great concern to the business. You will agree that all these have a bearing on the future profitability of the company.

Secondly, use of money implies that we assume stable or constant value of rupee. Taking this assumption means that the changes in the money value in future dates are conveniently ignored. For example, a piece of land purchased in 1990 for Rs. 2 lakh and another bought for the same amount in 1998 are recorded at the same price, although the first purchased in 1990

may be worth two times higher than the value recorded in the books because of rise in land values. Infact, most accountants know fully well that purchasing power of rupee does change but very few recognise this fact in accounting books and make allowance for changing price level.

3. Dual Aspect Concept. Financial accounting records all the transactions and events involving financial element. Each of such transactions requires two aspects to be recorded. The recognition of these two aspects of every transaction is known as a dual aspect analysis. According to this concept every business transactions has dual effect. For example, if a firm sells goods of Rs. 10,000 this transaction involves two aspects. One aspect is the delivery of goods and the other aspect is immediate receipt of cash (in the case of cash sales). Infact, the term ‘double entry’ book keeping has come into vogue because for every transaction two entries are made. According to this system the total amount debited always equals the total amount credited. It follows from ‘dual aspect concept’ that at any point in time owners’ equity and liabilities for any accounting entity will be equal to assets owned by that entity. This idea is fundamental to accounting and could be expressed as the following equalities:

$$\text{Assets} = \text{Liabilities} + \text{Owners Equity} \dots\dots\dots(1)$$

$$\text{Owners Equity} = \text{Assets} - \text{Liabilities} \dots\dots\dots(2)$$

The above relationship is known as the ‘Accounting Equation’. The term ‘Owners Equity’ denotes the resources supplied by the owners of the entity while the term ‘liabilities’ denotes the claim of outside parties such as creditors, debenture-holders, bank against the assets of the business. Assets are the resources owned by a business. The total of assets will be equal to total of liabilities plus owners capital because all assets of the business are claimed by either owners or outsiders.

4. Going Concern Concept. Accounting assumes that the business

entity will continue to operate for a long time in the future unless there is good evidence to the contrary. The enterprise is viewed as a going concern, that is, as continuing in operations, at least in the foreseeable future. In other words, there is neither the intention nor the necessity to liquidate the particular business venture in the predictable future. Because of this assumption, the accountant while valuing the assets do not take into account forced sale value of them. Infact, the assumption that the business is not expected to be liquidated in the foreseeable future establishes the basis for many of the valuations and allocations in accounting. For example, the accountant charges depreciation of fixed assets values. It is this assumption which underlies the decision of investors to commit capital to enterprise. Only on the basis of this assumption can the accounting process remain stable and achieve the objective of correctly reporting and recording on the capital invested, the efficiency of management, and the position of the enterprise as a going concern. However, if the accountant has good reasons to believe that the business, or some part of it is going to be liquidated or that it will cease to operate (say within six-month or a year), then the resources could be reported at their current values. If this concept is not followed, International Accounting Standard requires the disclosure of the fact in the financial statements together with reasons.

5. Accounting Period Concept. This concept requires that the life of the business should be divided into appropriate segments for studying the financial results shown by the enterprise after each segment. Although the results of operations of a specific enterprise can be known precisely only after the business has ceased to operate, its assets have been sold off and liabilities paid off, the knowledge of the results periodically is also necessary. Those who are interested in the operating results of business obviously cannot wait till the end. The requirements of these parties force

the businessman 'to stop' and 'see back' how things are going on. Thus, the accountant must report for the changes in the wealth of a firm for short time periods. A year is the most common interval on account of prevailing practice, tradition and government requirements. Some firms adopt financial year of the government, some other calendar year. Although a twelve month period is adopted for external reporting, a shorter span of interval, say one month or three month is applied for internal reporting purposes.

This concept poses difficulty for the process of allocation of long term costs. All the revenues and all the cost relating to the year in operation have to be taken into account while matching the earnings and the cost of those earnings for the any accounting period. This holds good irrespective of whether or not they have been received in cash or paid in cash. Despite the difficulties which stem from this concept, short term reports are of vital importance to owners, management, creditors and other interested parties. Hence, the accountants have no option but to resolve such difficulties.

6. Cost Concept. The term 'assets' denotes the resources land building, machinery etc. owned by a business. The money values that are assigned to assets are derived from the cost concept. According to this concept an asset is ordinarily entered on the accounting records at the price paid to acquire it. For example, if a business buys a plant for Rs. 5 lakh the asset would be recorded in the books at Rs. 5 lakh, even if its market value at that time happens to be Rs. 6 lakh. Thus, assets are recorded at their original purchase price and this cost is the basis for all subsequent accounting for the business. The assets shown in the financial statements do not necessarily indicate their present market values. The term 'book value' is used for amount shown in the accounting records.

The cost concept does not mean that all assets remain on the account-

ing records at their original cost for all times to come. The asset may systematically be reduced in its value by charging 'depreciation', which will be discussed in detail in a subsequent lesson. Depreciation have the effect of reducing profit of each period. The prime purpose of depreciation is to allocate the cost of an asset over its useful life and not to adjust its cost. However, a balance sheet based on this concept can be very misleading as it shows assets at cost even when there are wide difference between their costs and market values. Despite this limitation you will find that the cost concept meets all the three basic norms of relevance, objectivity and feasibility.

7. The Matching concept. This concept is based on the accounting period concept. In reality we match revenues and expenses during the accounting periods. Matching is the entire process of periodic earnings measurement, often described as a process of matching expenses with revenues. In other words, income made by the enterprise during a period can be measured only when the revenue earned during a period is compared with the expenditure incurred for earning that revenue. Broadly speaking revenue is the total amount realised from the sale of goods or provision of services together with earnings from interest, dividend, and other items of income. Expenses are cost incurred in connection with the earnings of revenues. Costs incurred do not become expenses until the goods or services in question are exchanged. Cost is not synonymous with expense since expense is sacrifice made, resource consumed in relation to revenues earned during an accounting period. Only costs that have expired during an accounting period are considered as expenses. For example, if a commission is paid in January, 2002, for services enjoyed in November, 2001, that commission should be taken as the cost for services rendered in November 2001. On

account of this concept, adjustments are made for all prepaid expenses, outstanding expenses, accrued income, etc, while preparing periodic reports.

8. Accrual Concept. It is generally accepted in accounting that the basis of reporting income is accrual. Accrual concept makes a distinction between the receipt of cash and the right to receive it, and the payment of cash and the legal obligation to pay it. This concept provides a guideline to the accountant as to how he should treat the cash receipts and the right related thereto. Accrual principle tries to evaluate every transaction in terms of its impact on the owner's equity. The essence of the accrual concept is that net income arises from events that change the owner's equity in a specified period and that these are not necessarily the same as change in the cash position of the business. Thus it helps in proper measurement of income.

9. Realisation Concept. Realisation is technically understood as the process of converting non-cash resources and rights into money. As accounting principle, it is used to identify precisely the amount of revenue to be recognised and the amount of expense to be matched to such revenue for the purpose of income measurement. According to realisation concept revenue is recognised when sale is made. Sale is considered to be made at the point when the property in goods passes to the buyer and he becomes legally liable to pay. This implies that revenue is generally realised when goods are delivered or services are rendered. The rationale is that delivery validates a claim against the customer. However, in case of long run construction contracts revenue is often recognised on the basis of a propor-

tionate or partial completion method. Similarly, in case of long run instalment sales contracts, revenue is regarded as realised only in proportion to the actual cash collection. In fact, both these cases are the exceptions to the notion that an exchange is needed to justify the realisation of revenue.

2.5 ACCOUNTING CONVENTIONS

1. Convention of Materiality. Materiality concept states that items of small significance need not be given strict theoretically correct treatment. Infact, there are many events in business which are insignificant in nature. The cost of recording and showing in financial statement such events may not be well justified by the utility derived from that information. For example, an ordinary calculator costing Rs. 100 may last for ten years. However, the effort involved in allocating its cost over the ten year period is not worth the benefit that can be derived from this operation. The cost incurred on calculator may be treated as the expense of the period in which it is purchased. Similarly, when a statement of outstanding debtors is prepared for sending to top management, figures may be rounded to the nearest ten or hundred.

This convention will unnecessarily overburden an accountant with more details in case he is unable to find an objective distinction between material and immaterial events. It should be noted that an item material for one party may be immaterial for another. Actually, there are no hard and fast rule to draw the line between material and immaterial events and hence, It is a matter of judgement and common sense. Despite this limitation, It is necessary to disclose all material information to make the financial statements clear and understandable. This is required as per IAS-1 and also reiterated in IAS-5. As per IAS-1, materiality should govern the selection and application of accounting policies.

2. Convention of Conservatism. This concept requires that the accountants must follow the policy of ‘‘playing safe’’ while recording business transactions and events. That is why, the accountant follow the rule anticipate no profit but provide for all possible losses, while recording the business events. This rule means that an accountant should record lowest possible value for assets and revenues, and the highest possible value for liabilities and expenses. According to this concept, revenues or gains should be recognised only when they are realised in the form of cash or assets (i.e. debts) the ultimate cash realisation of which can be assessed with reasonable certainty. Further, provision must be made for all known liabilities, expenses and losses, Probable losses regarding all contingencies should also be provided for. ‘Valuing the stock in trade at market price or cost price which ever is less’, ‘making the provision for doubtful debts on debtors in anticipation of actual bad debts’, ‘adopting written down value method of depreciation as against straight line method’, not providing for discount on creditors but providing for discount on debtors’, are some of the examples of the application of the convention of conservatism.

The principle of conservatism may also invite criticism if not applied cautiously. For example, when the accountant create secret reserves, by creating excess provision for bad and doubtful debts, depreciation, etc. The financial statements do not present a true and fair view of state of affairs. American Institute of Certified Public Accountant have also indicated that this concept need to be applied with much more caution and care as over conservatism may result in misrepresentation.

4. Convention of Consistency. The convention of consistency requires that once a firm decided on certain accounting policies and methods and has used these for some time, it should continue to follow the same methods or procedures for all subsequent similar events and transactions

unless it has a sound reason to do otherwise. In other words, accounting practices should remain unchanged from one period to another. For example, if depreciation is charged on fixed assets according to straight line method, this method should be followed year after year. Analogously, if stock is valued at 'cost or market price whichever is less', this principle should be applied in each subsequent year.

However, this principle does not forbid introduction of improved accounting techniques. If for valid reasons the company makes any departure from the method so far in use, then the effect of the change must be clearly stated in the financial statements in the year of change. The application of the principle of consistency is necessary for the purpose of comparison. One could draw valid conclusions from the comparison of data drawn from financial statements of one year with that of the other year. But the inconsistency in the application of accounting methods might significantly affect the reported data.

2.6 ACCOUNTING STANDARDS

The accounting concepts and conventions discussed in the foregoing pages are the core elements in the theory of accounting. These principles, however, permit a variety of alternative practices to co-exist. On account of this the financial results of different companies can not be compared and evaluated unless full information is available about the accounting methods which have been used. The lack of uniformity among accounting practices have made it difficult to compare the financial results of different companies. It means that there should not be too much discretion to companies and their accountants to present financial information the way they like. In other words, the information contained in financial statements should conform to carefully considered standards. Obviously, accounting standards are needed to :

- a) provide a basic framework for preparing financial statements to be uniformly followed by all business enterprises,
- b) make the financial statements of one firm comparable with the other firm and the financial statements of one period with the financial statements of another period of the same firm,
- c) make the financial statements credible and reliable, and
- d) create general sense of confidence among the outside users of financial statements.

In this context unless there are reasonably appropriate standards, neither the purpose of the individual investor nor that of the nation as a whole can be served. In order to harmonise accounting policies and to evolve standards the need in the USA was felt with the establishment of Securities and Exchange Commission (SEC) in 1933. In 1957, a research oriented organisation called Accounting Principles Boards (APB) was formed to spell out the fundamental accounting principles. After this the Financial Accounting Standards Board (FASB) was formed in 1973, in USA. At the international level, the need for standardisation was felt and therefore, an International Congress of accountants was organised in Sydney, Australia in 1972 to ensure the desired level of uniformity in accounting practices. Keeping this in view, International Accounting Standards Committee (IASC) was formed and was entrusted with the responsibility of formulating international standards.

In order to harmonise varying accounting policies and practices, the Institute of Chartered Accountants of India (ICAI) formed the Accounting Standards Board (ASB) in April, 1977. ASB includes representatives from industry and government. The main function of the ASB is to formulate accounting standards. This Board of the Institute of Chartered Accountants of India has so far formulated around 27 Accounting Standards, the list of these

accounting standards is furnished. Regarding the position of Accounting standards in India, it has been stated that the standards have been developed without first establishing the essential theoretical framework. As a result, accounting standards lack direction and coherence. This type of limitation also existed in UK and USA but it was remedied long back.

Hence, there is an emergent need to make an attempt to develop a conceptual framework and also revise suitably the Indian Accounting Standards to reduce the number of alternative treatments.

2.7 SUMMARY

Accounting principles have been defined as the body of doctrines commonly associated with the theory and procedure of accounting serving as an explanation of current practices and as a guide for the selection of conventions or procedures where alternatives exists. Rules governing the formation of accounting axioms and the principles derived from them have arisen from common experience, historical precedent statements by individuals and professional bodies and regulations of Governmental agencies. The general acceptance of an accounting principle usually depends on how well it meets the following three basic norms: a) Usefulness b) Objectiveness, and c) Feasibility The various terms used for describing the basic ideas are: concepts, postulates, propositions, assumptions, underlying principles, fundamentals, conventions, doctrines, rules, axioms, etc. Some of these terms/ideas have a better claim to be called 'concepts ' while the rest should be called 'conventions'. The term 'Concept' is used to connote the accounting postulates, i.e., necessary assumptions and ideas which are fundamental to accounting practice. In other words, fundamental accounting concepts are broad general assumptions which underline the periodic financial statements of business enterprises. The term 'convention' is used to signify customs or tradi-

tion as a guide to the preparation of accounting statements. The important accounting concepts and conventions include Separate Business Entity Concept, Money Measurement Concept, Dual Aspect Concept, Going Concern Concept, Accounting Period Concept, Cost Concept, The Matching Concept, Accrual Concept, Realisation Concept, Convention of Materiality, Convention of Conservatism and Convention of consistency. In order to harmonise accounting policies and to evolve standards 'International Accounting Standards Committee' was formed and was entrusted with the responsibility of formulating international standards. Similarly, the Institute of Chartered Accountants of India (ICAI) formed the Accounting Standards Board in April, 1977 which has issued as many as 29 accounting standards over the years.

2.8 KEYWORDS

Accounting principle: Accounting principles are the assumptions and roles of accounting, the methods and procedures of accounting and the application of these rules, methods and procedures to the actual practice of accounting.

Accounting concept: It refers to assumptions and conditions on which accounting system is based.

Accounting convention: Accounting convention refers to the customs and traditions followed by accountants as guidelines while preparing accounting statements.

2.9 SELF-ASSESSMENT QUESTIONS

1. State whether the following statements are true or false :

- a) The 'materiality concept' refers to the state of ignoring small items and values from accounts.
- b) Accounting principles are rules of action or conduct which are adopted by the accountants universally while recording accounting transac-

Subject :Accounting for Managers

Updated by:Dr. Mahesh Chand Garg

Course Code : CP-104

Lesson No. : 3

**ACCOUNTING PROCESS : EQUATION, RULES,
PREPARATION OF JOURNAL AND LEDGER**

STRUCTURE

- 3.0 Objective
- 3.1 Introduction
- 3.2 Accounting Equation
- 3.3 Rules of Debit and Credit
- 3.4 Meaning and format of Journal.
 - 3.4.1 Meaning of Journalising
 - 3.4.2 Compound Journal Entry
 - 3.4.3 Opening Entry
 - 3.4.4 Goods Account
- 3.5 Ledger
 - 3.5.1 Relationship between Journal and Ledger
 - 3.5.2 Posting
 - 3.5.3 Rules of Posting
 - 3.5.4 Balancing of an Account
- 3.6 Summary
- 3.7 Keywords
- 3.8 Self Assessment Questions
- 3.9 Suggested Readings

3.0 OBJECTIVE

After reading this lesson, you should be able to

- (a) Define accounting equation
- (b) Make the classification of accounts
- (c) Explain the stages in accounting process

3.1 INTRODUCTION

Any economic transaction or event of a business which can be expressed in monetary terms should be recorded. Traditionally, accounting is a method of collecting, recording, classifying, summarizing, presenting and interpreting financial data of an economic activity. The series of business transactions occurs during the accounting period and its recording is referred to an accounting process/mechanism. An accounting process is a complete sequence of accounting procedures which are repeated in the same order during each accounting period. Therefore, accounting process involves the following steps :

i) Identification of Transaction : In accounting, only financial transactions are recorded. A financial transaction is an event which can be expressed in terms of money and which brings change in the financial position of a business enterprise. An event is an incident or a happening which may or may not bring any change in the financial position of a business enterprise. Therefore, all transactions are events but all events are not transactions. A transaction is a complete action, to an expected or possible future action. In every transaction, there is movement of value from one source to another. For example, when goods are purchased for cash, there is a movement of goods from the seller to the buyer and a movement of cash from buyer to the seller. Transactions may be external (between a business entity and a second party, e.g., goods sold on credit to Hari or internal (do not involve second party, e.g., depreciation charged on the machinery).

Illustration 1

State with reasons whether the following events are transactions or not to Mr. Nikhil, Proprietor, Delhi Computers

- (i) Mr. Nikhil started business with capital (brought in cash)Rs. 40,000.
- (ii) Paid salaries to staff Rs. 5,000.

- (iii) Purchased machinery for Rs. 20,000 in cash.
- (iv) Placed an order with Sen & Co. for goods for Rs. 5,000.
- (v) Opened a Bank account by depositing Rs. 4,000.
- (vi) Received pass book from bank.
- (vii) Appointed Sohan as Manager on a salary of Rs. 4,000 per month.
- (viii) Received interest from bank Rs. 500.
- (ix) Received a price list from Lalit.

Solution :

Here, each event is to be considered from the view point of Mr. Nikhil's business. Those events which will change the financial position of the business of Mr. Nikhil, should be regarded as transaction.

- (i) It is a transaction, because it changes the financial position of Mr. Nikhil's business. Cash will increase by Rs. 40,000 and Capital will increase by Rs. 40,000.
- (ii) It is a transaction, because it changes the financial position of Mr. Nikhil's business. Cash will decrease by Rs. 5,000 and Salaries (expenses) will increase by Rs. 5,000
- (iii) It is a transaction, because it changes the financial position of Mr. Nikhil's business. Machinery comes in and cash goes out.
- (iv) It is not a transaction, because it does not change the financial position of the business.
- (v) It is a transaction, because it changes the financial position of the business. Bank balance will increase by Rs. 4,000 and cash balance will decrease by Rs. 4,000.

- (vi) It is also not a transaction, because it does not change the financial position of Mr. Nikhil.
- (vii) It is also not a transaction, because it does not change the financial position of Mr. Nikhil.
- (viii) It is a transaction, because it changes the financial position of Mr. Nikhil's business.
- (ix) It is not a transaction, because it does not change the financial position of the business of Mr. Nikhil.

ii) Recording the transaction : Journal is the first book of original entry in which all transactions are recorded event-wise and date-wise and presents a historical record of all monetary transactions. Journal may further be divided into sub-journals as well.

iii) Classifying : Accounting is the art of classifying business transactions. Classification means statement setting out for a period where all the similar transactions relating to a person, a thing, expense, or any other subject are grouped together under appropriate heads of accounts.

iv) Summarising : Summarising is the art of making the activities of the business enterprise as classified in the ledger for the use of management or other user groups i.e. sundry debtors, sundry creditors etc. Summarisation helps in the preparation of Profit and Loss Account and Balance sheet for a particular financial year.

v) Analysis and Interpretation : The financial information or data is recorded in the books of account must further be analysed and interpreted so to draw meaningful conclusions. Thus, analysis of accounting information will help the

management to assess in the performance of business operation and forming future plans also.

vi) Presentation or reporting of financial information : The end users of accounting statements must be benefited from analysis and interpretation of data as some of them are the "share holders" and other one the "stake holders". Comparison of past and present statements and reports, use of ratios and trend analysis are the different tools of analysis and interpretation.

From the above discussion one can conclude that accounting is an art which starts and includes steps right from recording of business transactions of monetary character to the communicating or reporting the results thereof to the various interested parties. For this purpose, the transactions are classified into various accounts, the description of which follows in the next section.

3.2 ACCOUNTING EQUATION

Dual concept states that 'for every debit, there is a credit'. Every transaction should have two-sided effect to the extent of same amount. This concept has resulted in accounting equation which states that at any point of time assets of any entity must be equal (in monetary terms) to the total of owner's equity and outsider's liabilities. In other words, accounting equation is a statement of equality between the assets and the sources which finance the assets and is expressed as :

$$\text{Assets} = \text{Sources of Finance}$$

Assets may be tangible e.g. land, building, plant, machinery, equipment, furniture, investments, cash, bank, stock, debtors etc. or intangible e.g. patent rights, trade marks, goodwill etc.,

Sources include internal i.e. capital provided by the owner and external i.e. liabilities. Liabilities are the obligations of the business to others/

outsiders. The above equation gets expanded.

$$\text{Assets} = \text{Liabilities} + \text{Capital}$$

All transactions of a business can be referred to this equation :

$$\text{Assets} = \text{Liabilities} + \text{Owner's equity}$$

To further explain the transaction of revenues, expenses, losses and gains, the equation can be expanded thus :

$$\text{Assets} + \text{Expenses} = \text{Liabilities} + \text{Revenue} + \text{Owner's equity}$$

or
$$\text{Assets} = \text{Liabilities} + (\text{Revenue} - \text{Expenses}) + \text{Owner's equity}$$

or
$$\text{Assets} = \text{Liabilities} + \text{Owner's equity} + \text{Owner's equity}$$

(income) which ultimately becomes

$$\text{Assets} = \text{Liabilities} + \text{Owner's equity}$$

Let us consider the facts of the following case, step by step, to understand as to how the equation remains true even in changed circumstances.

Illustration 2

1. Commenced business with cash Rs. 50,000
2. Purchased goods for cash Rs. 20,000 and on credit Rs. 30,000
3. Sold goods for cash Rs. 40,000 costing Rs. 30,000
4. Rent paid Rs. 500
5. Bought furniture Rs. 5,000 on credit
6. Bought refrigerator for personal use Rs. 5,000

Solution :

1. Business receives cash Rs. 50,000 (asset) and it owes Rs. 50,000 to the proprietor as his capital i.e. equity.

Assets	(=)	Liabilities	(+)	Owner's equity
Cash	Rs. 50,000	Nil		Capital Rs. 50,000

(2) Purchased goods for cash Rs. 20,000 and on credit Rs. 30,000. Business has acquired asset namely – goods worth Rs. 50,000 and another asset namely = cash has decreased by Rs. 20,000 while liability– creditors have been created of Rs. 30,000.

Assets	(=)	Liabilities	(+)	Owner's equity
Cash	30,000	Creditors	30,000	Capital 50,000
Goods	50,000			
	80,000		30,000	50,000

(3) Sold goods for cash Rs. 40,000 costing Rs. 30,000

This transaction has resulted in decrease of goods by Rs. 30,000 and increase in cash by Rs. 40,000 thus Increasing equity by Rs. 10,000

Assets	(=)	Liabilities	(+)	Owner's equity
Cash	70,000	Creditors	30,000	Capital 60,000
Goods	20,000			
	90,000		30,000	60,000

(4) Rent paid Rs. 500

This transaction has resulted in an expenditure of Rs. 500 effecting decrease of cash and equity by Rs. 500 each.

Assets	(=)	Liabilities	(+)	Owner's equity
Cash	69,500	Creditors	30,000	Capital 59,500
Goods	20,000			
	89,500		30,000	59,500

(5) Bought furniture on credit Rs. 5,000

This transaction results in acquiring an asset namely furniture worth Rs. 5,000 and increasing creditors by Rs. 5,000

Assets (=)		Liabilities (+)		Owner's equity		
Cash	69,500	Creditors	35,000	Capital	59,500	
Goods	20,000					
Furniture	5,000					59,500
	94,500		35,000			

(6) Bought refrigerator for personal use Rs. 5,000. This transaction will have the effect of reducing both cash as well as capital by Rs. 5,000 each.

Assets (=)		Liabilities (+)		Owner's equity		
Cash	64,500	Creditors	35,000	Capital	54,500	
Goods	20,000					
Furniture	5,000					
	89,500		35,000		54,500	

Account

An account is a summary of the relevant transactions at one place relating to a particular head. It records not only the amount of transaction but also their effect and direction.

Classification of Accounts

The classification of accounts is given as follows :

1. Personal Accounts : Accounts which are related to individuals, firms, companies, co-operative societies, banks, financial institutions are known as personal accounts. The personal accounts may further be classified into three

categories :

(i) Natural Personal Accounts : Accounts of individuals (natural persons) such as Akhils' A/c, Rajesh's A/c, Sohan's A/c are natural personal accounts.

(ii) Artificial Personal Accounts : Accounts of firms, companies, banks, financial institutions such as Reliance Industries Ltd., Lions Club, M/s Sham & Sons, Punjab National Bank, National College are artificial personal accounts.

iii) Representative Personal Accounts : The accounts recording transactions relating to limited expenses and incomes are classified as nominal accounts. But in certain cases (due to the matching concept of accounting) the amount on a particular date, is payable to the individuals or recoverable from individuals. Such amount (i) relates to the particular head of expenditure or income and (ii) represents persons to whom it is payable or from whom it is recoverable. Such accounts are classified as representative personal account e.g., Wages outstanding account, Pre-paid insurance account etc.

2. Real Accounts : Real accounts are the accounts related to assets/properties. These may be classified into tangible real account and intangible real account. The accounts relating to tangible assets (which can be touched, purchased and sold) such as building, plant, machinery, cash, furniture etc. are classified as tangible real accounts. Intangible real accounts (which do not have physical shape) are the accounts related to intangible assets such as goodwill, trademarks, copyrights, patents etc.

3. Nominal Accounts : The accounts relating to income, expenses, losses and gains are classified as nominal accounts. For example Wages Account, Rent Account, Interest Account, Salary Account, Bad Debts Accounts, Purchases; Account etc. fall in the category of nominal accounts.

3.3 RULES OF DEBIT AND CREDIT

Basically, debit means to enter an amount to the left side of an account and credit means to enter an amount to the right side of an account. In the abbreviated form Dr. stands for debit and Cr. stands for credit. Both debit and credit may represent either increase or decrease depending upon the nature of an account.

The Rules for Debit and Credit are given below :

Types of Accounts	Rules for Debit	Rules for Credit
(a) For Personal Accounts	Debit the receiver	Credit the giver
(b) For Real Accounts	Debit what comes in	Credit what goes out
(c) For Nominal Accounts	Debit all expenses and losses	Credit all incomes and gains

Illustration 3 : How will you classify the following into personal, real and nominal accounts ?

- (i) Investments
- (ii) Freehold Premises
- (iii) Accrued Interest to Ram
- (iv) Haryana Agro Industries Corporation
- (v) Janata Mechanical Works
- (vi) Salary Account
- (vii) Loose Tools Accounts
- (viii) Purchases Account
- (ix) Corporation Bank Ltd.

- (x) Capital Account
- (xi) Brokerage Account
- (xii) Toll Tax Account
- (xiii) Dividend Received Account
- (xiv) Royalty Account
- (xv) Sales Account

Solution :

Real Account : (i), (ii), (vii), (viii), (xv)

Nominal Account : (vi), (xi), (xii), (xiii), (xiv)

Personal Account : (iii), (iv), (v), (ix), (x)

3.4 MEANING AND FORMAT OF A JOURNAL

Journal is a historical record of business transactions or events. The word journal comes from the French word "Jour" meaning "day". It is a book of original or prime entry written up from the various source documents. Journal is a primary book for recording the day to day transactions in a chronological order i.e. in the order in which they occur. The journal is a form of diary for business transactions. This is also called the book of first entry since every transaction is recorded firstly in the journal. The format of a journal is shown as follows :

Journal

Date	Particulars	L.F.	Debit (Rs.)	Credit (Rs.)

- (a) *Date Column* : This column shows the date on which the transaction is recorded. The year and month is written once, till they change.
- (b) *Particular Column* : Under this column, first the names of the accounts to be debited, then the names of the accounts to be credited and lastly, the narration (i.e. a brief explanation of the transaction) are entered.
- (c) *L.F., i.e. Ledger Folio Column* : Under this column, the ledger page number containing the relevant account is entered at the time of posting.
- (d) *Debit amount Column* : Under this column, the amount to be debited is entered.
- (e) *Credit amount Column* : Under this column, the amount to be credited is entered.

3.4.1 Meaning of Journalising

The process of recording a transaction in the journal is called journalising. The various steps to be followed in journalising business transactions are given below :

- Step 1 Ascertain what accounts are involved in a transaction.
- Step 2 Ascertain what is the nature of the accounts involved.
- Step 3 Ascertain which rule of debit and credit is applicable for each of the accounts involved.
- Step 4 Ascertain which account is to be debited and which is to be credited.
- Step 5 Record the date of transaction in the 'Date column'.
- Step 6 Write the name of the account to be debited, very close to the left hand side i.e. the line demarcating the 'Date column' and the 'Particulars

column') along with the abbreviation 'Dr.' on the same line against the name of the account in the 'Particulars column' and the amount to be debited in the 'Debit Amount column' against the name of the account.

Step 7 Write the name of the account to be credited in the next line preceded by the word 'To' at a few spaces towards right in the 'Particulars column' and the amount to be credited in the 'Credit Amount column' against the name of the account.

Step 8 Write 'Narration' (i.e. a brief description of the transaction) within brackets in the next line in the 'Particulars column'.

Step 9 Draw a line across the entire 'Particulars column' to separate one Journal Entry from the other.

Advantages of Journal

1. The transactions are recorded in journal as and when they occur so the chances of error is minimized.
2. It help in preparation of ledger.
3. Any transfer from one account to another account is made through Journal.
4. The entry recorded in journal are self explanatory as it includes narration also.
5. It can record any such transaction which cannot be entered in any other books of account.
6. Every transaction is recorded in chronological order (date wise) so the chances of manipulations are reduced.
7. Journal shows all information in respect of a transaction at one place.
8. The closing balances of previous year of accounts related to assets and liabilities can be brought forward to the next year by passing journal entry in journal.

Illustration 4 : From the following transactions of Nikhil, find out the nature of accounts and also state which account should be debited and which should be credited :

- i) Rent paid
- ii) Interest received
- iii) Purchased furniture for cash
- iv) Machinery sold in cash
- v) Outstanding salaries
- vi) Paid to Surinder

Solution :

Analysis of Transactions

Transaction	Accounts Involved	Nature of Accounts	Debit/ Credit
i) Rent paid	Rent Account	Nominal Account	Debit
	Cash Account	Real Account	Credit
ii) Interest Received	Cash Account	Real Account	Debit
	Interest Account	Nominal	Credit
iii) Purchased furniture for cash	Furniture Account	Real Account	Debit
	Cash Account	Real Account	Credit
iv) Machinery sold in cash	Cash Account	Real Account	Debit
	Machinery Account	Real Account	Credit
v) Outstanding Salary	Salary Account	Nominal Account	Debit
	Outstanding Salary Account	Personal Account	Credit
vi) Paid to Surinder	Surinder's Account	Personal Account	Debit
	Cash Account	Real Account	Credit

Illustration 5 : Journalise the following transactions :

2005		Rs.
Jan. 1	Mohan started business with cash	80,000
Jan. 6	Purchased goods from Ram on credit	30,000
Jan. 8	Sold goods on cash	6,000
Jan. 15	Bought Furniture from Yash for cash	8,000
Jan. 18	Paid Salary to manager	6,500
Jan. 20	Paid Rent to land lord in cash	1,000

Solution :

Journal

Date	Particulars	L.F.	Debit	Credit
2005	Cash Account Dr. To Mohan's Capital Account <i>(Being business started with cash)</i>		80,000	80,000
" 6	Purchases Account Dr. To Ram's Account <i>(Being purchase on credit)</i>		30,000	30,000
" 8	Cash Account Dr. To Sales Account <i>(Being sold goods for cash)</i>		6,000	6,000
" 15	Furniture Account Dr. To Cash Account <i>(Being bought furniture for cash)</i>		8,000	8,000
" 18	Salary Account Dr. To Cash Account <i>(Being salary paid to manager)</i>		6,500	6,500
" 20	Rent Account Dr. To Cash Account <i>(Being rent paid to land lord)</i>		1,000	1,000

3.4.2 Compound Journal Entries

When more than two accounts are involved in a transaction and the transaction is recorded by means of a single journal entry instead of passing several journal entries, such single journal entry is termed as 'Compound Journal Entry'.

Illustration 6 : Journalise the following :

2005

Nov. 1	Paid to Arun Rs. 5,250 discount allowed by him Rs.50	
6	Received from Somesh Rs. 1,900 and from Komesh Rs. 400	
8	Goods purchased for cash	Rs. 4,000
	Furniture purchased for cash	Rs. 3,000
	Paid cash to Raman	Rs. 2,090
	Paid Salary in cash	Rs. 7,600
	Paid Rent in cash	Rs. 1,400

Solution :

Journal

Date	Particulars	L.F.	Debit(Rs.)	Credit(Rs.)
2005 Nov.1	Arun's Account Dr. To Cash Account To Discount Received Account <i>(Being the cash paid to Arun and discount received)</i>		5,300	5,250 50
Nov.6	Cash Account Dr. To Somesh's Account To Komesh's Account <i>(Being cash received)</i>		2,300	1,900 400
Nov.8	Purchases Account Dr. Furniture Account Dr. Raman's Account Dr. Salary Account Dr. Rent Account Dr. To Cash Account <i>(Being the cash paid)</i>		4,000 3,000 2,090 7,600 1,400	18,090

3.4.3 Opening Entry

A journal entry by means of which the balances of various assets, liabilities and capital appearing in the balance sheet of previous accounting period are brought forward in the books of the current accounting period, is known as 'Opening Entry'. While passing an opening entry, all assets accounts (individually) are debited and all liabilities accounts (individually) are credited and the Net worth (i.e. excess of assets over liabilities) is credited to Proprietor's Capital Account (in case of a proprietary concern) or Partners' Capital Accounts (in case of a partnership concern).

Illustration 7 On 1st April 2006, Singh's assets and liabilities stood as follows :

Assets : Cash Rs. 6,000; Bank Rs. 17,000; Stock Rs. 3,000; Bills
Receivable Rs.7,000; Debtors Rs. 3,000; Building Rs.70,000;
Investments Rs. 30,000; Furniture Rs. 4,000

Liabilities : Bills payable Rs. 5000, Creditors Rs. 9000, Ram's Loan Rs. 13000

Pass an opening Journal entry.

Solution :

Journal

Date	Particulars	L.F.	Debit(Rs.)	Credit (Rs.)
2006				
April 1	Cash Account Dr.		6,000	
	Bank Account Dr.		17,000	
	Stock Account Dr.		3,000	
	Bills Receivable Account Dr.		7,000	
	Debtors Account Dr.		3,000	
	Building Account Dr.		70,000	
	Investment Account Dr.		30,000	
	Furniture Dr.		4,000	
	To Bills payable Account			5,000
	To Creditor's Account			9,000
	To Ram's loan Account			13,000
	To Singh's capital			1,13,000
	<i>(Being the opening balances of assets and liabilities)</i>			
			1,40,000	1,40,000

3.4.4 Goods Account

In accounting the meaning of goods is restricted to only those articles which are purchased by a businessman with an intention to sell it. For example, if a businessman purchased typewriter, it will be goods for him if he deals in typewriter but if he deals in other business say clothes then typewriter will be asset for him and clothes will be goods.

Sub-Division of Goods Accounts

The goods account is not opened in accounting books. In place of goods account the following accounts are opened in the books of accounts :

Purchases Account : This is opened for goods purchased on cash and credit.

Sales Account : This account is opened for the goods sold on cash and credit.

Purchase Returns Account or Return Outward Account : This account is opened for the goods returned to suppliers.

Sales Returns Account or Return Inward Account : This account is opened for the goods returned by customers.

IMPORTANT CONSIDERATIONS FOR RECORDING THE BUSINESS TRANSACTIONS

1. **Trade Discount**

Trade discount is usually allowed on the list price of the goods. It may be allowed by producer to wholesaler and by wholesaler to retailer for purchase of goods in large quantity. It is not recorded in the books of account and entry is made only with the net amount paid or received. For example purchased goods of list price Rs. 8,000 at 15% trade discount from X. In this case the following entry will be passed :

		Rs.		Rs.
Purchases Account	Dr.	6,800		
To X				6,800
(Being goods purchased at 15% trade discount less list price)				

2. **Cash Discount**

Cash discount is a concession allowed by seller to buyer to encourage him to make early cash payment. It is a Nominal Account. The person who allows discount, treat it as an expense and debits in his books and it is called discount allowed and the person who receives discount, treat it as an income and it is called discount received and credited in his books of account as "Discount Received Account." For example, X owes Rs. 6,000 to Y. He pays Rs. 5,950 in full settlement against the amount due. In the books of X, the journal entry will be :

		Rs.	Rs.
Y	Dr.	6,000	
	To Cash Account		5,950
	To Discount Received account		50
(Being Cash paid and discount received)			

In the books of Y		Rs.	Rs.
Cash Account	Dr.	5,950	
Discount Allowed Account	Dr.	50	
	To X		6,000
(Being cash received and discount allowed)			

3. Goods distributed as free samples

Some times business distribute goods as free samples for the purpose of advertisement. In this case, Advertisement Account is debited and Purchases Account is credited. For example, goods costing Rs. 8000 were distributed as free sample. To record this transaction following entry will be passed :

		Rs.	Rs.
Advertisement Account	Dr.	8,000	
	To Purchases Account		8,000

4. Interest on capital

Interest paid on capital is an expense. Therefore interest account should be debited. On the other hand the capital of the business increases. So the capital account should be credited. The entry will be as follows :

Interest on Capital Account	Dr.		
	To Capital Account		

5. Interest charged on Drawings

If the interest is charged on drawings then it will be an increase in the income of business, so interest on drawings will be credited. On the other hand there will be increase in drawings or decrease in Capital. So Drawings Account will be debited. To record this, following entry will be passed :

Drawing Account/Capital Account	Dr.
To Interest on Drawing Account	

6. Depreciation charged on Fixed Assets

Depreciation is the gradual, permanent decrease in the value of an asset due to wear and tear and many other causes. Depreciation is an expense so the following entry will be passed :

Depreciation Account	Dr.
To Asset Account	

7. Bad Debts

Sometimes a debtor of business fails to pay the amount due from him. Reasons may be many e.g. he may become insolvent or he may die. Such irrecoverable amount is a loss to the business. To record this following entry will be passed :

Bad Debts Account	Dr.
To Debtor's Account	

8. Bad Debts Recovered

When any amount becomes irrecoverable from any customer or debtor his account is closed in the books. If in future any amount is recovered from him then his personal account will not be credited because that does not exist in the books. So the following entry is passed :

Cash Account	Dr.
To Bad Debts Recovered Account	

9. Purchase and Sale of investment

When business has some surplus money it may invest this amount in shares, debentures or other types of securities. When these securities are purchased, these are recorded at the purchase price paid. At the time of sale of investment the sale price of an investment is recorded in the books of accounts. The following entry is passed to record the purchase of investment :

Investment Account	Dr.
To Cash Account	

In case of sale of these securities the entry will be :

Cash Account	Dr.
To Investment Account	

10. Loss of Goods by Fire/Accident/theft

A business may suffer loss of goods on account of fire, theft or accident. It is a business loss and a nominal account. It also reduces the goods at cost price, and increases the loss/expenses of the business. The entry will be passed as :

Loss by fire/Accident/theft Account	Dr.(for loss)
Insurance Company Account	Dr. (for insurance claim admitted)
To Purchases Account	

11. Income Tax Paid

Income Tax paid should be debited to Capital Account or Drawings Account and credited to Cash Account in case of sole proprietorship and partnership firms. The reason behind this is that income tax is a personal expense for the sole trader and partners because it is paid on income of proprietor. The entry will be as follows :

Capital Account/Drawing Account	Dr.
To Cash Account	

12. Bank Charges

Bank provide various services to their customers. Bank deducts some charges by debiting the account of customers. It is an expense for the business. To record this, Bank charges account is debited and bank account is credited in the books of customer.

13. Drawings Account

It is a personal account of the proprietor. When the businessman withdraws cash or goods from the business for his personal/domestic use it is called as 'drawings'. Drawings reduce the capital as well as goods/cash balance of the business. The journal entry is :

Drawings Account	Dr.
To Cash Account	
To Purchases Account	

14. Personal expenses of the proprietor

When the private expenses such as life insurance premium, income tax, home telephone bill, tuition fees of the son of the proprietor etc. are paid out of the cash or bank account of business it should be debited to the Drawings Account of the proprietor.

15. Sale of Asset/Property

When the asset of a business is sold, there may occur a profit or loss on its sale. Its journal entry is :

- (i) In case there is a profit on sale of Property/Assets

Cash/Bank Account	Dr.
To Asset/Property Account	
To Profit on sale of Asset Account	

- (ii) In case of a loss on sale of asset

Cash/Bank Account	Dr.
Loss on sale of Asset Account	Dr.
To Asset Account	

16. Amount paid or Received on behalf of customer

(i) When the business entity pays the amount on behalf of old reputed customers such as carriage in anticipation of recovering the same later on, carriage account should not be opened because carriage is not the expense of the seller. It should be debited/charged to customer's Personal account.

(ii) When the business entity receives the amount on behalf of customers from the third party as mutually settled between the third party and the customer, the account of the third party/person making the payment should not be opened in the books of the receiving entity. The journal entry in the books of the entity is :

Cash/Bank Account	Dr.
To Customer/Debtor's Account	

17. Amount paid on behalf of creditors

When the creditors/supplier instructs the business entity to make payment on their behalf, the amount so paid should be debited to creditors account and liability of the business will decrease accordingly.

18. The events affecting business but they do not involve any transfer/exchange of money for the time being, they would not be recorded in the financial books.

19. Paid wages/installation charges for erection of machinery

Wages and installation charges are the expenses of nominal nature. But for erection of machinery no separate account should be opened for such expenses because these expenses are of capital nature and it will be merged/debited

to the cost of assets i.e. machinery. The journal entry is:

Machinery Account	Dr.
To Cash/Bank Account	
(Being wages/installation charges paid for the erection of machinery)	

3.5 LEDGER

Journal is a daily record of all business transactions. In the journal all transactions relating to persons, expenses, assets, liabilities and incomes are recorded. Journal does not give a complete picture of the fundamental elements of book keeping i.e. properties, liabilities, proprietorship accounts and expenses and incomes at a glance and at one place. Business transactions being recurring in nature, a number of entries are made for a particular type of transactions such as sales, purchases, receipts and payments of cash, expenses etc., through out the accounting year. The entries are therefore scattered over in the Journal. In fact, the whole Journal will have to be gone through to find out the combined effect of various transactions on a particular account. In case, at any time, a businessman wants to now :

- i) How much he has to pay to the suppliers/creditors of goods ?
- ii) How much he has to receive from the customers ?
- iii) What is the total amount of purchases and sales made during a particular period?
- iv) How much cash has been spent/incurred on various items of expenses such as salaries, rent, carriage, stationery etc.
- v) What is the amount of profit or loss made during a particular period ?
- vi) What is the financial position of the unit on a particular date ?

The above mentioned information cannot be easily gathered from the journal itself because the details of such information is scattered all over the

journal. It is thus of dire need to get a summarised/grouped record of all the transactions relating to a particular person, or a thing or an expenditure to take managerial decisions. The mechanics of collecting, assembling and summarising all transactions of similar nature at one place can better be served by a book known as 'ledger' i.e. a classified head of accounts.

Ledger is a principal book of accounts of the enterprise. It is rightly called as the 'King of Books'. Ledger is a set of accounts. Ledger contains the various personal, real and nominal accounts in which all business transactions of the entity are recorded. The main function of the ledger is to classify and summarise all the items appearing in Journal and other books of original entry under appropriate head/set of accounts so that at the end of the accounting period, each account contains the complete information of all transaction relating to it. A ledger therefore is a collection of accounts and may be defined as a summary statement of all the transactions relating to a person, asset, expense or income which have taken place during a given period of time and shows their net effect.

3.5.1 Relationship between Journal and Ledger

Journal and Ledger are the most useful books kept by a business entity. The points of distinction between the two are given below :

1. The journal is a book of original entry where as the ledger is the main book of account.
2. In the journal business transactions are recorded as and when they occur i.e. date-wise. However posting from the journal is done periodically, may be weekly, fortnightly as per the convenience of the business.
3. The journal does not disclose the complete position of an account. On the other hand, the ledger indicates the position of each account debit wise or credit wise, as the case may be. In this way, the net position of each account is known immediately.

4. The record of transactions in the journal is in the form of journal entries whereas the record in the ledger is in the form of an account.

Utility of a Ledger

The main utilities of a ledger are summarised as under :

- (a) It provides complete information about all accounts in one book.
- (b) It enables the ascertainment of the main items of revenues and expenses
- (c) It enables the ascertainment of the value of assets and liabilities.
- (d) It facilitates the preparation of Final Accounts.

Format of a Ledger Account

A ledger account can be prepared in any one of the following two forms:

Form 1

Name of the Account

Dr.

Cr.

Date	Particulars	Journal Folio	Amount (Rs.)	Date	Particulars	Journal Folio	Amount (Rs.)

Form 2

Name of the Account.....

Date	Particulars	Journal Folio	Debit Amount Rs.	Credit Amount Rs.	Dr./Cr.	Balance Rs.

3.5.2 Posting

Posting refers to the process of transferring debit and credit amounts from the Journal or subsidiary books to the respective heads of accounts in the ledger. Journal will have at a minimum of one debit and one credit for each transaction. The ledger will have either a debit or a credit for each account used in the Journal. Posting may be done daily, weekly fort nightly or monthly according to the convenience and requirements of the business, but care should be taken to complete it before the preparation of annual financial statements.

3.5.3 Procedure/Rules of Posting

The following rules should be followed while posting business transactions to respective accounts in the ledger from the journal :

- i) Enter the date and year of the transaction in the date column.
- ii) Open separate account in the ledger for each person, asset, revenue, liability, expense, income and loss appearing in the Journal.
- iii) The appropriate/relevant account debited in the Journal will be debited in the ledger, but the reference should be given of the other account which has been credited.
- iv) Similarly, the account credited in the Journal should be credited in the ledger, but the reference has to be given of the other account which has been debited in the Journal.
- v) The debit posting should be prefixed by the word 'To' and credit posting should be prefixed by the word 'By'.
- vi) In the Journal Folio (J.F.) column the page number of the book of original entry (Journal) is entered. This is explained with the following example :

Illustration 8 : Goods sold to Ravi for Rs. 1000 on credit on Ist April 2006. Record this transaction in the journal and the ledger.

Solution :

The journal entry will be

Date	Particulars	L.F.	Dr. (Rs.)	Cr.(Rs.)
2006 April 1	Ravi's Account Dr. To Sales Account (Being Credit Sales of Goods to Ravi)		1,000	1,000

The above journal entry will appear in the ledger in two accounts as follows. On the debit side of Ravi's Account, we will write "To Sales Account" and on the credit side of Sales Account we will write "By Ravi's Account".

Dr. Ravi's Account Cr.

Date	Particulars	J.F.	Amount (Rs.)	Date	Particulars	J.F.	Amount (Rs.)
2006 April 1	To Sales Account		1,000				

Dr. Sales's Account Cr.

Date	Particulars	J.F.	Amount (Rs.)	Date	Particulars	J.F.	Amount (Rs.)
				2006 April 1	By Ravi's Account		1,000

Posting of Compound Journal Entry

When a single entry is passed to record more than one transaction, it is known as a compound journal entry. However, it will be treated as several separate entries while posting. The following example will make the point clear:

Illustration 9

	Rs.
2006 March 31 Purchased stationary	1,000
Paid salary	7,000
Paid wages	600
Paid rent	1,200

Pass the necessary journal entry and prepare ledger accounts.

Solution :

The Journal entry will be

Date	Particulars	Dr. (Rs.)	Cr.(Rs.)
2006	Stationary Account	1,000	
March 31	Salary Account	7,000	
	Wages Account	600	
	Rent Account	1,200	
	To Cash Account		9,800
	<i>(Being cash paid for the above)</i>		

Then it will be posted as under :

Dr. **Stationary's Account** **Cr.**

Date	Particulars	J.F.	Rs.	Date	Particulars	J.F.	Rs.
2006	To Cash Account		1,000				
March 31							

Dr. **Salary's Account** **Cr.**

Date	Particulars	J.F.	Rs.	Date	Particulars	J.F.	Rs.
2006	To Cash Account		7,000				
March 31							

Dr. Rent Account Cr.

Date	Particulars	J.F.	Rs.	Date	Particulars	J.F.	Rs.
2006 March 31	To Cash Account		1200				

Dr. Wages Account Cr.

Date	Particulars	J.F.	Rs.	Date	Particulars	J.F.	Rs.
2006 March 31	To Cash Account		600				

Dr. Cash Account Cr.

Date	Particulars	J.F.	Rs.	Date	Particulars	J.F.	Rs.
				2006 March 31	By Stationary A/c		1,000
				March 31	By Salary A/c		7,000
				March 31	By Rent A/c		1,200
				March 31	By Wages A/c		600

3.5.4 Balancing of an Account

After transferring the entries from Journal to the ledger, the next stage is to ascertain the net effect of all the transactions posted to relevant account. When the posting is completed, most of the accounts may have entries on both sides of the accounts i.e. debit entries and credits entries. The process of finding out the difference between the totals of the two sides of a Ledger account is known as balancing and the difference of the total debits and the total credits of accounts is known as balance.

If the total of the credit side is bigger than the total of the debit side, the difference is known as credit balance. In the reverse case, it is called debit balance.

Steps for Balancing Ledger Account

Ledger accounts may be balanced as and when it is required. The balances of various accounts are ascertained as under :

1. Make the total of both sides of an account in a worksheet.
2. Write down the higher amount on the side obtained e.g. if the total of the debit side is 6,000 and the credit side is 5,500, the amount Rs. 6,000 is first inserted in the total on the debit side.
3. Also write down the same total on the other side of the account i.e. the total of Rs. 6,000 is written against the total on the credit side also.
4. Find out the difference between the two sides of the account. In this example debit side is more than credit side; therefore, there is a debit balance of Rs. 500.
5. This debit balance of Rs. 500 is to be shown as "By Balance c/d" in the account on the credit side.
6. Finally, the amount of the closing balance should be brought down as the opening balance at the beginning of the next day. Remember that if the opening balance is not written on the next day, the balancing is incomplete.

Balancing of different accounts

Balancing is done either weekly, monthly, quarterly, biannually or annually, depending on the requirements of the business concern.

Personal Accounts : Personal accounts are balanced regularly to know the amounts due to the persons or due from the persons. A debit balance of this account indicate that the person concerned is a debtor of the business concern and a credit balance indicates that he is a creditor of the business concern. If a personal account shows no balance at all, it means that the amount due to him or due from him is settled in full.

Real Accounts : Real accounts are generally balanced at the end of the accounting year when final accounts are prepared and always shows debit balances. But, bank account may show either a debit balance or a credit balance.

Nominal Accounts : In fact, nominal accounts are not balanced, as they are to be closed by transferring them to the final accounts i.e. Trading and Profit and Loss Account.

Illustration 10 : Enter the following transactions in the Journal of Ramesh, and post them to the Ledger.

2006	Rs.
Jan. 1	Assets in hand : Cash Rs. 630; Cash at Bank Rs. 23,100; Stock of goods; Rs. 26,400; M. & Co., Rs. 6,750. Liabilities : Marathi & Co. Rs. 3,880; Ram & Sons Rs. 3000.
" 2	Received a cheque from M. & Co. in full settlement 6,650
" 4	Sold goods to Chand & Sons on credit 1,440 Carriage paid 35 Sold goods to G. & Co. for cash 3,120
" 5	Brought goods from Ram & Sons on credit 4,000 Paid Marathi & Co. by cheque in full settlement 3,800
" 6	Bought goods from Chatterjee 6,300
" 13	Returned goods to Chatterjee (not being up to specifications) 300
" 16	Goods used personally by proprietor 50
" 17	Sold goods to M. & Co 5,000
" 20	Cheque received from Chand & Sons 1,440
" 22	Bank advises Chand & Sons cheque returned unpaid
" 24	Cash deposited with bank 2,000
" 27	Cheque sent to Chatterjee (Discount allowed Rs. 150) 5,850
" 31	Paid salaries 600 Paid rent 300 Drew for personal use out of bank 500

Solution :

Journal

Date	Particulars	L.F.	Dr. (Rs.)	Cr. (Rs.)
2006				
Jan. 1	Cash A/c Dr. Bank A/c Dr. Stock of Goods A/c Dr. M. & Co. Dr. To Marathi & Co. To Ram & Sons To Ramesh's Capital A/c (Being balances of various assets & liabilities brought forward)		630 23,100 26,400 6,750	3,880 3,000 50,000
2	Bank A/c Dr. Discount Allowed A/c Dr. To M. & Co. (Being a cheque received from M. & Co. & Discount allowed)		6,650 100	6,750
4	Chand & Sons A/c Dr. To Sales A/c (Being goods sold on credit)		1,440	1,440
4	Carriage Outwards A/c Dr. To Cash A/c (Being the carriage paid)		35	35
4	Cash A/c Dr. To Sales A/c (Being goods sold for cash)		3,120	3,120
5	Purchases A/c Dr. To Ram & Sons (Being goods purchased on credit)		4,000	4,000

5	Marathi & Co. A/c To Bank A/c To Discount A/c (Being payment made to Marathi & Co. in full settlement & discount received)	Dr.	3,880	3,800 80
6	Purchases A/c To Chatterjee (Being goods purchased on credit)	Dr.	6,300	6,300
13	Chatterjee To Returns Outwards A/c (Being goods returned to Chatterjee)	Dr.	300	300
16	Drawings A/c To Purchases A/c (Being goods withdrawn for personal use)	Dr.	50	50
17	M. & Co. To Sales A/c (Being goods sold on credit)	Dr.	5,000	5,000
20.	Bank A/c To Chand & Sons A/c (Being a cheque received from Chand & Sons)	Dr.	1,440	1,440
22	Chand & Sons A/c To Bank A/c (Being the cheque of Chand & Sons dishonoured)	Dr.	1,440	1,440
24	Bank A/c To Cash A/c (Being cash deposited into bank)	Dr.	2,000	2,000

27	Chatterjee A/c To Bank A/c To Discount Received A/c (Being payment made to Chatterjee and discount received)	Dr.	6,000	5,850 150
31	Salaries A/c To Cash A/c (Being salaries paid)	Dr.	600	600
31	Rent A/c To Cash A/c (Being rent paid)	Dr.	300	300
31	Drawings A/c To Bank A/c (Being cash withdrawn from bank for personal use)	Dr.	500	500

Ledger of Ramesh

Dr.				Cr.			
Capital Account							
Date	Particulars	J.F.	Rs.	Date	Particulars	J.F.	Rs.
2006				2006			
Jan. 31	To Balance c/d		50,000	Jan. 1	By Balance b/f		50,000
			50,000				50,000
				Feb. 1	By Balance b/d		50,000

Dr.				Cr.			
Stock of Goods Account							
Date	Particulars	J.F.	Rs.	Date	Particulars	J.F.	Rs.
2006				2006			
Jan. 1	To Balance b/f		26,400	Jan. 31	By Balance c/d		26,400
			26,400				26,400
Feb. 1	Balance b/d		26,400				

Dr.				Cash Account				Cr.			
Date	Particulars	J.F.	Rs.	Date	Particulars	J.F.	Rs.				
2006				2006							
Jan. 1	To Balance b/f		630	Jan. 4	By Carriage Out-wards A/c		35				
4	To Sales A/c		3,120	24	By Bank A/c		2,000				
				31	By Salaries A/c		600				
				31	By Rent A/c		300				
				31	By Balance c/d		815				
			3,750				3,750				
Feb.1	To Balance b/d		815								

Dr.				Bank Account				Cr.			
Date	Particulars	J.F.	Rs.	Date	Particulars	J.F.	Rs.				
2006				2006							
Jan. 1	To Balance b/f		23,100	Jan. 5	By Marathi & Co.		3,800				
2	To M. & Co.		6,650	22	By Chand & Sons		1,440				
20	To Chand & Sons		1,440	27	By Chatterjee		5,850				
24	To Cash A/c		2,000	31	By Drawings		500				
				31	By Balance c/d		21,600				
			33,190				33,190				
Feb.1	Balance b/d		21,600								

Dr.				M. & Co.'s Account				Cr.			
Date	Particulars	J.F.	Rs.	Date	Particulars	J.F.	Rs.				
2006				2006							
Jan. 1	To Balance b/f		6,750	Jan. 1	By Bank A/c		6,650				
17	To Sales A/c		5,000	2	By Discount Allowed A/c		100				
					By Balance c/d		5,000				
			11,750				11,750				
Feb.1	To Balance b/d		5,000								

Dr.				Marathi & Co.'s Account				Cr.			
Date	Particulars	J.F.	Rs.	Date	Particulars	J.F.	Rs.				
2006				2006							
Jan. 5	To Bank A/c		3,800	Jan. 1	By Balance b/f		3,880				
5	To Discount		80								
	Received A/c		3,880				3,880				

Dr.				Ram & Sons's Account				Cr.			
Date	Particulars	J.F.	Rs.	Date	Particulars	J.F.	Rs.				
2006				2006							
Jan. 31	To Balance c/d		7,000	Jan. 1	By Balance b/f		3,000				
			7,000	5	By Purchase A/c		4,000				
				Feb. 1	By Balance b/d		7,000				

Dr.				Chand & Sons' Account				Cr.			
Date	Particulars	J.F.	Rs.	Date	Particulars	J.F.	Rs.				
2006				2006							
Jan.4	To Sales A/c		1,440	Jan. 20	By Bank A/c		1,440				
22	To Bank A/c		1,440	31	By balance c/d		1,440				
			2,880				2,880				
Feb. 1	To Balance b/d		1,440								

Dr.				Chatterjee's Account				Cr.			
Date	Particulars	J.F.	Rs.	Date	Particulars	J.F.	Rs.				
2006				2006							
Jan. 13	To Returns			Jan. 6	By Purchases A/c		6,300				
	Outwards A/c		300								
27	To Bank A/c		5,850								
27	To Discount		150								
	Received A/c		6,300				6,300				

Dr.		Purchases Account				Cr.	
Date	Particulars	J.F.	Rs.	Date	Particulars	J.F.	Rs.
2006				2006			
Jan. 5	To Ram & Sons		4,000	Jan.16	By Drawings A/c		50
6	To Chatterjee		6,300	Jan. 31	By Balance c/d		10,250
			10,300				10,300
Feb. 1	To Balance b/d		10,250				

Dr.		Sales Account				Cr.	
Date	Particulars	J.F.	Rs.	Date	Particulars	J.F.	Rs.
				2006			
				Jan. 4	By Chand & Sons A/c		1,440
				4	By Cash A/c		3,120
Jan. 31	To Balance c/d		9,560	17	By M. & Co.		5,000
			9,560				9,560
				Feb.1	By Balance b/d		9,560

Dr.		Discount Allowed Account				Cr.	
Date	Particulars	J.F.	Rs.	Date	Particulars	J.F.	Rs.
2006				2006			
Jan. 2	To M. & Co.		100	Jan. 31	By Balance c/d		100
			100				100
Feb. 1	To Balance c/d		100				

Dr.		Carriage Outwards Account				Cr.	
Date	Particulars	J.F.	Rs.	Date	Particulars	J.F.	Rs.
2006				2006			
Jan. 4	To Cash A/c		35	Jan. 31	By Balance c/d		35
			35				35
Feb. 1	To Balance b/d		35				

Dr. Discount Received Account Cr.

Date	Particulars	J.F.	Rs.	Date	Particulars	J.F.	Rs.
2006				2006			
Jan. 31	To Balance c/d		230	Jan. 5	By Marathi & Co.		80
			230	27	By Chatterjee A/c		150
				Feb. 1	By Balance b/d		230

Dr. Return Outwards Account Cr.

Date	Particulars	J.F.	Rs.	Date	Particulars	J.F.	Rs.
2006				2006			
Jan. 31	To balance c/d		300	Jan. 13	By Chatterjee		300
			300	Feb. 1	By Balance b/d		300

Dr. Drawings Account Cr.

Date	Particulars	J.F.	Rs.	Date	Particulars	J.F.	Rs.
2006				2006			
Jan. 16	To Purchases A/c		50	Jan. 31	By Balance c/d		550
31	To Bank A/c		500				550
Feb. 1	To Balance b/d		550				

Dr. Salaries Account Cr.

Date	Particulars	J.F.	Rs.	Date	Particulars	J.F.	Rs.
2006				2006			
Jan. 3	To Cash A/c		600	Jan. 31	By Balance c/d		600
			600				600
Feb. 1	To Balance b/d		600				

Dr.				Rent Account				Cr.			
Date	Particulars	J.F.	Rs.	Date	Particulars	J.F.	Rs.				
2006				2006							
Jan. 31	To Cash A/c		300	Jan. 31	By Balance c/d		300				
			300				300				
Feb. 1	To Balance b/d		300								

3.6 SUMMARY

Accounting as an information system is the process of identifying, measuring and communicating the economic information of an organisation to its users who need the information for making decisions. An accounting process is a complete sequence with the recording of the transactions and ending with the preparation of the final accounts. Journal is concerned with the recording of financial transactions in an orderly manner, soon after their occurrence. The function of systematic analysis of the recorded data to accumulate the transactions of similar type at one place is performed by maintaining the ledger in which different accounts are opened to which transactions are posted.

3.7 KEYWORDS

Accounting equation: Accounting equations is an accounting formula expressing equivalence of the two expressions of assets and liabilities.

Journal: Journal is a tabular record in which business transactions are recorded in a chronological order.

Journal entry: The record of the transaction in the journal is called a journal entry.

Ledger: Ledger is the principal book of accounts where similar transactions relating to a particular person or thing are recorded.

Posting: It is the process of transferring debit and credit amounts from the journal or subsidiary books to the respective heads of accounts in the ledger.

Compound journal entry: A journal entry which includes more than one debit or more than one credit is called compound journal entry.

3.8 SELF ASSESSMENT QUESTIONS

1. What is meant by Journal ? Enumerate the steps in journalising.
2. Define ledger. Explain the procedure for balancing a ledger account.
3. What is meant by posting? How is posting made from the journal in the ledger? Explain with suitable examples.
4. Pass necessary Journal entries in the books of Narender for the month of March, 2006 :
 - i) An old machinery appearing in books exchanged for a new machinery of Rs. 5,000.
 - ii) Issued a cheque for Rs. 1,000 in favour of landlord for a rent for the month of March.
 - iii) Paid electricity bill of Rs. 450 by cheque.
 - iv) The goods destroyed by theft Rs. 3,000.
 - v) Paid wages for the installation of machinery Rs. 5,000.
 - vi) Accrued interest Rs. 1100.
 - vii) Goods worth Rs. 4,000 given away by way of charity.
 - viii) Goods taken by Proprietor worth Rs. 10,000 for personal use.
5. From the following transactions of Mr. Kamal Mahajan write up journal

entries and post them into ledger.

2006

Jan.1 Assets-Cash in hand Rs. 2,000, Cash at bank Rs. 5,000, Stock of goods Rs. 4,000, Machinery Rs. 9000, Furniture Rs. 2,000, Sham owes Rs. 500, Ram owes Rs. 3,500. Liabilities - Loan Rs. 4,000; sum owing to Y Rs. 3,000.

Jan.2 Sold goods to Pawan Rs. 3,000.

Jan. 5 Received Rs. 2,950 from Pawan in full settlement of his accounts.

Jan. 6 Payment made to Y Rs. 1,975 by cheque, he allowed discount of Rs. 25.

Jan. 8 Old furniture sold for Rs. 200.

Jan. 10 Ram pays Rs. 3,400 by cheque and discount allowed to him Rs. 100, cheque deposited in bank.

Jan. 13 Paid for repairs to machinery Rs. 250

Jan. 15 Bank intimates the cheque of Ram has been returned dishonoured.

Jan. 18 Paid municipal taxes Rs. 200.

Jan. 22 Bought goods from Sita & Co. Rs. 1,000.

Jan. 25 Goods worth Rs. 600 given away as charity.

Jan. 31 Returned goods to Sita & Co. Rs. 1,000.

Jan. 31 An amount which was written off as bad debts in 1998 recovered Rs. 1,000.

6. Pass necessary journal entries and post them in the appropriate Ledger Accounts of Kamal for the month of January 2006 :

- 1 Started business with Rs. 2,00,000 in the bank and Rs. 40,000 cash.
- 1 Bought shop fitting Rs. 40,000 and a van Rs. 60,000, both paid by cheque.
- 2 Paid rent by cheque Rs. 5,000.
- 3 Bought goods for resale on credit from Zakir & Co. Rs. 50,000.
- 5 Cash sales Rs. 5,000.
- 8 Paid wages of assistant in cash Rs. 1,000.
- 10 Paid insurance by cheque Rs. 500
- 12 Cash sales Rs. 8,000
- 15 Goods returned to Zakir & Co. Rs. 6,000.
- 17 Paid Zakir & Co. Rs. 30,000 by cheque.
- 24 Bought stationery and paid in cash Rs. 500.
- 25 Cash sales Rs. 15,000.
- 27 Paid Rao & Co. Rs. 14,000 by cheque.
- 31 Paid Rs. 20,000 into the bank.

3.9 SUGGESTED READINGS

- 1. S.N. Maheshwari, Advanced Accountancy
- 2. R.L. Gupta, Advanced Accountancy
- 3. M.C. Sukhla and T.S. Grewal, Advanced Accounts

Subject : Accounting for Managers

Code : CP-104

Updated by: Dr. M.C. Garg

Lesson : 4

TRIAL BALANCE

STRUCTURE

- 4.0 Objective
- 4.1 Introduction
- 4.2 Objectives of Preparing Trial Balance
- 4.3 Limitations of Trial Balance
- 4.4 Methods of Preparation Of Trial Balance
- 4.5 Accounting Errors
- 4.6 Steps for Location of Errors
- 4.7 Summary
- 4.8 Keywords
- 4.9 Self Assessment Questions
- 4.10 Suggested Readings

4.0 OBJECTIVE

After reading this lesson, you should be able to

- (a) Define Trial Balance and explain the methods of preparation of Trial Balance.
- (b) Define accounting errors and steps for location of accounting errors.

4.1 INTRODUCTION

A Trial Balance is a two-column schedule listing the titles and balances of all the accounts in the order in which they appear in the ledger. The debit balances are listed in the left-hand column and the credit balances in the right-hand column. In the case of the General Ledger, the totals of the two columns should agree.

We, now, know the fundamental principle of double entry system of accounting where for every debit, there must be a corresponding credit. Therefore, for every debit or a series of debits given to one or several accounts, there is a corresponding credit or a series of credits of an equal amount given to some other account or accounts and vice-versa. Hence, according to this principle, the sum total of debit amounts must equal the credit amounts of the ledger at any date. If the various accounts in the ledger are balanced, then the total of all debit balances must be equal to the total of all credit balances. If the same is not true then the books of accounts are arithmetically inaccurate.

It is, therefore, at the end of the financial year or at any other time, the balances of all the ledger accounts are extracted and are recorded in a statement known as Trial Balance and finally totalled up to see whether the total of debit balances is equal to the total of credit balances. A Trial Balance may thus be defined as a statement of debit and credit totals or balances extracted from the various accounts in the ledger books with a view to test the arithmetical accuracy of the books.

The agreement of the Trial Balance reveals that both the aspects of each transaction have been recorded and that the books are arithmetically accurate. If both the sides of Trial Balance do not agree

to each other, it shows that there are some errors, which must be detected and rectified if the correct final accounts are to be prepared. Thus, Trial Balance forms a connecting link between the ledger accounts and the final accounts.

4.2 OBJECTIVES OF PREPARING TRIAL BALANCE

The following are the main objectives of preparing the trial balance:

- (i) To check the arithmetical accuracy of books of accounts:** According to the principle of double entry system of book-keeping, every business transaction has two aspects, debit and credit. So, the agreement of the trial balance is a proof of the arithmetical accuracy of the books of accounts. However, it is not a conclusive evidence of their accuracy as there may be certain errors, which the Trial Balance may not be able to disclose.
- (ii) Helpful in preparing final accounts:** The trial balance records the balances of all the ledger accounts at one place which helps in the preparation of final accounts, i.e. Trading and Profit and Loss Account and Balance Sheet. But, unless the trial balance agrees, the final accounts cannot be prepared. So, if the trial balance does not agree, errors are located and necessary corrections are made at the earliest, so that there may not be unnecessary delay in the preparation of the final accounts.

(iii) To serve as an aid to the management: By comparing the trial balances of different years changes in figures of certain important items such as purchases, sales, debtors etc. are ascertained and their analysis is made for taking managerial decisions. So, it serves as an aid to the management.

4.3 LIMITATIONS OF TRIAL BALANCE

The following are the main limitations of the Trial Balance:

- (i) Trial Balance can be prepared only in those concerns where double entry system of accounting is adopted.
- (ii) Though trial balance gives arithmetic accuracy of the books of accounts but there are certain errors, which are not disclosed by the trial balance. That is why it is said that trial balance is not a conclusive proof of the accuracy of the books of accounts.
- (iii) If trial balance is not prepared correctly then the final accounts prepared will not reflect the true and fair view of the state of affairs of the business. Whatever conclusions and decisions are made by the various groups of persons will not be correct and will mislead such persons.

4.4 METHODS OF PREPARATION OF TRIAL BALANCE

A trial balance can be prepared by the following two methods:

1. **Total method:** In this method, the debit and credit totals of each account are shown in the two amount columns (one for the debit total and the other for the credit total).

2. **Balance Method:** In this method, the difference of each amount is extracted. If debit side of an account is bigger in amount than the credit side, the difference is put in the debit column of the Trial Balance and if the credit side is bigger, the difference is written in the credit column of the Trial Balance.

A specimen of the Trial Balance is given as follows:

TRIAL BALANCE OF AS ON			
Serial No.	Name of the Account	Dr. Balance Rs.	Cr. Balance Rs.

Of the two methods of the trial balance preparation, the second is usually used in practice because it facilitates the preparation of the final accounts.

Illustration 4.1: The following Trial Balance has been prepared wrongly. You are asked to prepare the Trial Balance correctly.

Name of Accounts	Debit Balance (Rs.)	Credit Balance (Rs.)
Cash in hand		7,000
Purchases returns	8,000	
Wages	8,000	
Establishment expenses	12,000	
Sales returns		7,000
Capital	22,000	
Carriage outwards		2,000
Discount received	1,200	
Commission earned	800	
Machinery		20,000
Stock		10,000
Debtors	8,000	
Creditors		12,000
Sales		44,000
Purchases	1,28,000	
Bank overdraft		1,14,000
Manufacturing expenses	14,000	
Loan from Ashok	14,000	
Carriage inward	1,000	
Interest on investments		1,000
Total	2,17,000	2,17,000

Solution: Correct Trial Balance as on

Name of Accounts	Debit Balance (Rs.)	Credit Balance (Rs.)
Cash in hand	7,000	
Purchases returns		8,000
Wages	8,000	
Establishment expenses	12,000	
Sales returns	7,000	
Capital		22,000
Carriage outwards	2,000	
Discount received		1,200
Commission earned		800
Machinery	20,000	
Stock	10,000	
Debtors	8,000	
Creditors		12,000
Sales		44,000
Purchases	1,28,000	
Bank overdraft		1,14,000
Manufacturing expenses	14,000	
Loan from Ashok		14,000
Carriage inward	1,000	
Interest on investments		1,000
Total	2,17,000	2,17,000

4.5 ACCOUNTING ERRORS

If the two sides of a trial balance agree it is a prima facie evidence of the arithmetical accuracy of the entries made in the Ledger. But even

if the trial balance agrees, it does not necessarily mean that the accounting records are free from all errors, because there are certain types of errors, which are not revealed by a Trial Balance. Therefore a Trial Balance should not be regarded as a conclusive proof of accuracy of accounts.

In accounting an error is a mistake committed by the book-keeper (Accountant/Accounts Clerk) while recording or maintaining the books of accounts. An error is an innocent and non-deliberate act or lapse on the part of the persons involved in recording business transactions. It may occur while the transactions are originally recorded in the books of original entries i.e. Journal, Purchase Book, Sales Book, Purchase Return Book, Sales Return Book, Bills Receivable Book, Bills Payable Book and Cash Book, or while the ledger accounts are posted or balanced or even when the trial balance is prepared. These errors may affect the arithmetical accuracy of the trial balance or may defeat the very purpose of accounting. These errors can be classified as follows:

1. Clerical errors
2. Errors of Principle

A brief description of the above errors is given below:

(a) Clerical errors

Clerical errors are those errors, which are committed by the clerical staff during the course of recording business transactions in the books of accounts. These errors are:

1. Errors of omission
2. Errors of commission
3. Compensating errors

4. Errors of duplication

Errors of omission: When business transaction is either completely or partly omitted to be recorded in the books of prime entry it is called an 'error of omission'. When a business transaction is omitted completely, it is called a 'complete error of omission', and when a business transaction is partly omitted, it is called a "partial error of omission". A complete error of omission does not affect the agreement of trial balance whereas a partial error of omission may or may not affect the agreement of trial balance.

Omission of recording a business transaction either completely or partly, omission of ledger posting, omission of casting and balancing of an account and omission of carrying forward are some examples of the errors of omission.

An example of a complete error of omission is goods purchased or sold may not be recorded in the purchase book or sales book at all. This error will not affect the trial balance. An example of a partial error of omission is goods purchased for Rs. 5,500 recorded in Purchase Book for Rs. 550. This is a partial error of omission. This error will also not affect the agreement of trial balance. Another example of a partial error of omission is that if goods purchased for Rs. 5,500 is recorded in the Purchase Book for Rs. 5,500 but the personal account of the supplier is not posted with any amount on the credit side in the ledger, it is a partial error of omission and it will affect the agreement of trial balance.

Error of commission: Such errors are generally committed by the clerical staff due to their negligence during the course of recording

business transactions in the books of accounts. Though, the rules of debit and credit are followed properly yet some mistakes are committed. These mistakes may be due to wrong posting of a business transaction either to a wrong account or on the wrong side of an account, or due to wrong casting (addition) i.e. over-casting or under-casting or due to wrong balancing of the accounts in the ledger.

Compensating errors: Compensating errors are those errors, which cancel or compensate themselves. These errors arise when an error is either compensated or counter-balanced by another error or errors so that of the other on the debit or credit side neutralizes the adverse effect of one on credit side or debit side. For example, over-posting on one side may be compensated by under posting of an equal amount on the same side of the same account or over posting of one side of an account may be compensated by an equal overprinting on the opposite side of some other account. But these errors do not affect the trial balance.

Errors of duplication: When a business transaction is recorded twice in the prime books and posted in the Ledger in the respective accounts twice, the error is known as the 'Error of Duplication'. These errors do not affect the trial balance.

(b) Errors of principle

When a business transaction is recorded in the books of original entries by violating the basic/fundamental principles of accountancy it is called an error of principle. Some examples of these errors are:

- (i) When revenue expenditure is treated as capital expenditure or vice-versa, e.g. building purchased is debited to the purchase account instead of the building account.
- (ii) Revenue expenses debited to the personal account instead of the expenses account, e.g. salary paid to Mr. Ashok, a clerk, for the month of June, debited to Ashok's account instead of salary account. These errors do not affect the Trial Balance.

The disagreement of the Trial Balance will disclose the following errors:

- (i) An item omitted to be posted from a subsidiary book into the Ledger i.e. a purchase of Rs. 6,000 from Satpal omitted to be credited to his account. As a result of this error, the figure of sundry creditors to be shown in the Trial Balance will reduce by Rs. 6,000 and the total of the credit side of the Trial Balance will be Rs. 6,000 less as compared to the debit side of the Trial Balance.
- (ii) Posting of wrong amount to a ledger account i.e. credit sale of Rs. 12,000 to Nisha wrongly posted to her account as Rs. 1,200. The effect of this error will be that the figure of sundry debtors will reduce by Rs. 10,800 and the total of the debit side of the Trial Balance will be Rs. 10,800 less than the total of the credit side of the Trial Balance.
- (iii) Posting an amount to the wrong side of the ledger account i.e. Rs. 150 discount allowed to a customer wrongly posted

to the credit instead of the debit of the Discount Account. As a result of this error, the credit side of the Trial Balance will exceed by Rs. 300 (double the amount of the error).

- (iv) Wrong additions or balancing of ledger account, i.e. while balancing Capital Account at the end of the financial year, credit balance of Rs. 1,89,000 wrongly taken as Rs. 1,79,000. As a result of this error, the credit total of the Trial Balance will be short by Rs. 10,000.
- (v) Wrong totalling of subsidiary books, i.e. Sales Book is overcast by Rs. 1,000. As a result of this error, Credit side of the Trial Balance will be excess by Rs. 1,000 because Sales Account will appear at a higher figure on the credit side of the Trial Balance.
- (vi) An item in the subsidiary book posted twice to a ledger account, i.e. a payment of Rs. 9,000 to a creditors posted twice to his account.
- (vii) Omission of a balance of an account in the Trial Balance, i.e. cash and bank balances may have been omitted to be included in the Trial Balance.
- (viii) Balance of some account wrongly entered in the Trial Balance i.e. a balance of Rs. 614 in Stationery Account wrongly entered as Rs. 416 in the Trial Balance.
- (ix) Balance of some account written to the wrong side of the Trial Balance, i.e., balance of Commission Earned Account

wrongly shown to the debit side instead of the credit side of the Trial Balance.

- (x) An error in the totalling of the Trial Balance will bring the disagreement of the Trial Balance.

Illustration 4.2: Ramniwas, a book-keeper, taking out a trial balance as on 31st March 2005, found that its debit and credit columns did not agree. He proceeded to check the entries and discovered the following errors:

1. A credit sale of Rs. 1,000 to Ajay had been correctly entered in the Sales Book but Ajay's Account had been debited with Rs. 100 only.
2. The total of the Bills Payable Book Rs. 5,000 had been posted to the credit of Bills Receivable Account.
3. Rs. 2,500 paid to Ram had been wrongly posted to Shyam.
4. Rs. 100 owing by a customer had been omitted from the list of debtors.
5. The discount column of the Cash Book representing discount allowed to customer has been over-added by Rs. 10.
6. Goods worth Rs. 100 taken by the proprietor omitted to be recorded in the books.
7. Depreciation on furniture Rs. 100, had not been posted to Depreciation Account.
8. The total of Sales Book had been added Rs. 1,000 short.

Which of the above errors caused the totals of the Trial Balance to disagree and by how much did the totals differ?

Solution: The effect of the above noted errors on the Trial Balance will be as follows:

1. Ajay's account has been given fewer debits for Rs. 900, so the debit side of the Trial Balance would be short by s. 900.
2. This error will not affect the agreement of the Trial Balance because the posting of the Bills Payable Book has been made to the correct side but in the wrong Account. The credit given to Bills Receivable Account instead of Bills Payable Account does not affect the agreement of the Trial Balance.
3. This error will not affect the agreement of the Trial Balance because the amount paid has been posted to right side through to a wrong account.
4. Sundry debtors have been shown in the Trial Balance with a less amount of Rs. 100, so debit side of the Trial Balance is short by Rs. 100.
5. Discount Account has been given an excess debit of Rs. 10 so debit side of the Trial Balance exceeds by Rs. 10.
6. This error will have no affect on the agreement of the Trial Balance because the dual aspect of the entry has been omitted i.e., neither of the two accounts involved in this transaction has been given debit or credit.

7. Depreciation of furniture has not been debited to Depreciation Account, so debit side of the Trial Balance will be short by Rs. 100.
8. Sales Account has been given less credit for Rs. 1,000, so credit side of the Trial Balance would be short by Rs. 1,000.

The combined affect of all the errors is that the credit side of the Trial Balance would exceed the debit side by Rs. 90.

4.6 STEPS FOR LOCATION OF ERRORS

Whenever a Trial Balance disagrees, the following steps should be taken to locate the causes of the difference:

1. Recheck the total of the Trial Balance and ascertain the exact amount difference in the Trial Balance.
2. Divide the difference of the Trial Balance by two and find out if there is any balance of the same amount in the Trial Balance. It may be that such a balance might have been recorded on the wrong side of the Trial Balance, thus causing a difference of double the amount.
3. If the mistake is not located by the above steps, the difference in the Trial Balance should be divided by 9. If the difference is evenly divisible by 9, the error may be due to transposition or transplacement of figures. A transposition occurs when 57 is written as 75, 197 as 791 and so on. A transplacement takes place when the digits of the numbers are moved to the left or right e.g. when Rs. 5,694 is written

as Rs. 56.94 or s. 569.40. If there is a transposition or transplacement of figures, the search can be narrowed down to numbers where these errors might have been made.

4. See that the balances of all accounts including cash and bank balances have been included in the Trial Balance.
5. See that the opening balances have been correctly brought forward in the current year's books.
6. If the difference is of a large amount, compare the Trial Balance of the current year with that of the previous year and see that the figures under similar head of account are approximately the same as those of the previous year and whether their balances fall on the same side of the Trial Balance. If the difference between the previous year figures and the current year figures is large one, establish the causes of difference.
7. If the above listed steps fail to detect the errors, check your work as follows:
 - (i) Check the totals of the subsidiary books paying particular attention to carry forwards.
 - (ii) Check the posting made from the Journal or subsidiary books in the ledger.
 - (iii) Re-check the balances extracted from ledger.
 - (iv) Re-cast the list of balances.

If all the efforts fail to locate the errors, all the books of primary entry (subsidiary books) must be cast, and, if necessary, the postings to the ledger should be re-checked.

4.7 SUMMARY

As air, food and water are indispensable to life, Trial Balance is indispensable to accounting. It serves as a lubricant for the smooth movement and completion of the accounting cycle. Moreover, it forms a useful connecting link between ledger accounts and final accounts. The agreement of a Trial Balance is not a conclusive proof as to the absolute accuracy of the books. It only gives an indication of the arithmetical accuracy. Even if both the sides of trial Balance agree to each other yet there may be some errors in the books of accounts.

4.8 KEYWORDS

Trial Balance: A Trial Balance is a statement of debit and credit balances extracted from all the ledgers with a view to ascertain arithmetical accuracy of posting of all transactions into the respective ledgers.

Clerical Errors: Those errors which are committed by the clerical staff during the course of recording business transactions in the books of accounts is known as clerical errors.

Compensating Errors: Compensating errors are those errors which cancel or compensate themselves.

Errors of Principle: When a transaction is recorded in the books of accounts by violating the basic principle of accounting, it is called an error of principle.

4.9 SELF ASSESSMENT QUESTIONS

1. What do you mean by a Trial Balance? Discuss the objectives and methods of preparing a Trial Balance.
2. Is the agreement of Trial Balance a conclusive proof of the accuracy of books of accounts? If not, what are the errors, which remain undetected by the Trial Balance?
3. In case of disagreement of the Trial Balance in what order you would follow to locate the errors?
4. The cashbook of Mr. Sheru shows Rs. 8,364 as bank balance on 31st December 2005. But you find that this does not agree with the balance as shown by passbook. On scrutiny you find the following discrepancies:
 - (a) On 15th Dec. 2005 the payment side of cashbook was undercast by Rs. 100.
 - (b) A cheque for Rs. 131 issued on 25th December 2005 was taken in cash column.
 - (c) One deposit of Rs. 150 was recorded in cash book as if there is not bank column therein.
 - (d) On 18th Dec. 2005 the debit balance of Rs. 1,526 as on the previous day was brought forward as credit balance.

- (e) Of the total cheques amounting to Rs. 11,514 drawn in last week of December 2005, cheques aggregating Rs. 7,815 encashed in December.
- (f) Dividends of Rs. 250 collected by bank and subscription of Rs. 200 paid by it were not recorded in cash book.
- (g) One outgoing cheque of Rs. 350 was recorded twice in the cash book.

5. From the following Trial Balance (containing obvious errors) prepare a correct Trial Balance:

	Dr. (Rs.)	Cr. (Rs.)
Purchases	60,000	
Reverse fund	20,000	
Sales		1,00,000
Purchase returns	1,000	
Sales returns		2,000
Opening stock	30,000	
Closing stock		40,000
Expenses		20,000
Outstanding expenses	2,000	
Bank balance	5,000	
Assets	50,000	
Debtors		80,000
Creditors		30,000
Capital	94,000	
Suspense account (difference in books)	10,000	
	2,72,000	2,72,000

6. The following balances appear in various accounts on 31.12.2005. You are asked to prepare a Trial Balance:

	Rs.		Rs.
Capital	20,000	Apprentice premium	300
Machinery	8,000	Insurance premium	200
Building	9,000	Interest on investment	600
Rates and taxes	500	Investments	6,000
Debtors	6,000	Bank charges	100
Stationery	900	Printing	300
Bills payable	1,950	Creditors	3,000
Loan from Raju and Co.	8,000	Office expenses	650
Opening stock	500	Wages	1,200
Bank	1,500	Sales	9,000
Cash	500	Purchases	3,500
Drawings	2,000	Furniture	2,000

4.10 SUGGESTED READINGS

1. Aggarwal and Jain, Advanced Financial Accounting.
2. S.N. Maheshwari, Introduction to Accounting.
3. R.L. Gupta, Advanced Accountancy.
4. Shukla and Grewal, Advanced Accounts.
5. Tulsin, Financial Accounting.

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Lesson : 5

SUBSIDIARY BOOKS

STRUCTURE

- 5.0 Objective
- 5.1 Introduction
- 5.2 Classification of Accounts
- 5.3 Rules of Debit and Credit
- 5.4 Journal, Ledger and Balancing
- 5.5 Subsidiary Books
- 5.6 Benefits of Specific Journals
- 5.7 Cash Book
- 5.8 Summary
- 5.9 Keywords
- 5.10 Self assessment questions
- 5.11 Suggested readings

5.0 OBJECTIVE

The main objective of this lesson is to make the students learn about the preparing of a Subsidiary Books and their relevance in accounting process while preparing the financial statements or books of accounts of an organization.

5.1 INTRODUCTION

Any economic transaction or event of a business, which can be expressed in monetary terms, should be recorded. Traditionally, accounting is a method of collecting, recording, classifying, summarizing, presenting and

interpreting financial data aspect of an economic activity. The series of business transaction occurring during the accounting period and its recording is referred to an accounting process/mechanism. An accounting process is a complete sequence of accounting procedures, which are repeated, in the same order during each accounting period. Therefore, accounting process involves the following stages or steps starting from identification of business transaction and ending with reverse entries for prepaid and occurred expenses:

1. Identification of transaction

A number of transactions take place in a business enterprise in a particular accounting year. Every transaction or event, which occurs, must influence the financial position of a business enterprise. These transactions may be external (between a business entity and second party) or internal (not involve second party) i.e. depreciation etc.

2. Recording the transaction

Journal is the first book of original entry in which all transactions are recorded event wise and date-wise and presenting a historical record of all monetary transactions. Journal may further be divided into sub-journals as well.

3. Classifying

Accounting is the art of classifying business transactions. Classification means statement setting out for a period where all the similar transactions relating to a person, a thing, expense, or any other subject are grouped together under appropriate heads of accounts.

4. Summarizing

Summarizing is the art of making the activities of the business enterprise as classified in the ledger for the use of management or other user groups i.e. sundry debtors, sundry creditors etc. Summarization helps in the preparation of Profit and Loss Account and Balance Sheet for a particular fiscal year.

5. Analysis and interpretation

The financial information or data is recorded in the books of account must further be analyzed and interpreted so to draw meaningful conclusions. Thus, analysis of accounting information will help the management to assess in the performance of business operation and forming future plans also.

6. Presentation or reporting of financial information

The end users of accounting statements must be benefited from analysis and interpretation of data as some of them are the 'stock-holders' and other one the 'stake holders'. Comparison of past and present statements and reports, use of ratios and trend analysis are the different tools of analysis and interpretation.

From the above discussion one can conclude that accounting is an art which starts and includes steps right from recording of business transactions of monetary character to the communicating or reporting the results thereof to the various interested parties. For this purpose, the transactions are classified into various accounts, the description of which follows in the next section.

5.2 CLASSIFICATION OF ACCOUNTS

An account is a summary of the relevant transactions at one place relating to a particular head. It records not only the amount of transaction but also their effect and direction. The classification of accounts is given below:

1. Personal accounts

Accounts, which are related with accounts of individuals, firms, companies, co-operative societies, financial institutions are known as personal accounts. The personal accounts may further be classified into three categories:

- (i) *Natural personal accounts:* Accounts of individuals (natural persons) such as Akhils' A/c, Rajesh's A/c, and Sohan's A/c are natural personal accounts.
- (ii) *Artificial personal accounts:* Accounts of firms, companies, institutions such as Reliance Industries Ltd., Lions Club, M/s Sham and Sons, National College are artificial personal accounts.
- (iii) *Representative personal accounts:* The accounts which represent some person such as wages outstanding account, prepaid insurance account, accrued interest account are considered as representative personal accounts.

2. Real accounts

Real accounts are the accounts related to assets/properties. These may be classified into tangible real account and intangible real account. The accounts relating to tangible assets such as building, plant, machinery, cash,

furniture etc. are classified as tangible real accounts. Intangible real accounts are the accounts related to intangible assets such as goodwill, trademarks, copyrights, patents etc.

3. Nominal accounts

The accounts relating to income, expenses, losses and gains are classified as nominal accounts. For example, Wages account, Rent account, Interest account, Salary account, Bad debts accounts etc. fall in the category of nominal accounts.

5.3 RULES OF DEBIT AND CREDIT

Basically, debit means to enter an amount on the left side of an account and credit means to enter an amount of the right side on an account. In the abbreviated form Dr. stands for debit and Cr. Stands for credit. Both debit and credit may represent either increase or decrease depending upon the nature of an account.

Rules for debit and credit

Types of accounts	Rules for debit	Rules for credit
(a) For personal accounts	Debit the receiver	Credit the giver
(b) For real accounts	Debit what comes in	Credit what goes out
(c) For nominal accounts	Debit all expenses and losses	Credit all incomes and gains

5.4 JOURNAL, LEDGER AND BALANCING

Journal

A journal is a book in which transactions are recorded in the order in which they occur i.e. in chronological order. A journal is called a book of prime entry (also called a book of original entry) because all business transactions

are entered first in this book. The process of recording a transaction in the journal is called journalising. An entry made in the journal is called a Journal Entry.

Ledger

Ledger is a principal book of accounts of the enterprise. It is rightly called as the 'King of Books'. Ledger is a set of accounts. An accounting system typically contains a large number of accounts and the number of accounts can be added as they are needed and anticipated. Ledger contains the various personal, real and nominal accounts in which all business transactions of the entity are recorded. The main function of the ledger is to classify and summarize all the items appearing in Journal and other books of original entry under appropriate head/set of accounts so that at the end of the accounting period, each account contains the complete entire information of all transaction relating to it. So ledger is a book of final entry wherein all the accounts find their place. Thus, to have a consolidated view of the similar transactions different accounts are prepared in the ledger. A ledger therefore is a collection of accounts and may be defined as a summary statement of all the transactions relating to a person, asset, expense or income which have taken place during a given period of time and shows their net effect.

Balancing of different accounts

Balancing is done either weekly, monthly quarterly, biannually or annually, depending on the requirements of the business concern.

Personal accounts

Personal accounts are balanced regularly to know the amounts due to the persons or due from the persons. A debit balance of this account indicate that the person concerned is a debtor of the business concern and a credit

balance indicates that he is a creditor of the business concern. If a personal account shows no balance at all, it means that the amount due to him or due from him is settled in full.

Real accounts

Real accounts are generally balanced at the end of the accounting year when final accounts are prepared and always shows debit balances. But, bank account may show either a debit balance or a credit balance.

Nominal accounts

In fact, nominal accounts are not balanced, as they are to be closed by transferring them to the final accounts i.e. Trading and Profit and Loss Account.

5.5 SUBSIDIARY BOOKS

When numbers of transactions are large, it is practically impossible to record all the transactions through one journal because of the following reasons:

- (a) The system of recording all transactions in a journal requires
 - (i) Writing down of the name of the account involved as many times as the transactions occur; and
 - (ii) An individual posting of each account debited and credited and hence, involves the repetitive journalizing and posting labour.
- (b) Such a system does not provide the information on a prompt basis.

- (c) Such a system does not facilitate the installation of an internal check system since only one person can handle the journal.
- (d) The journal becomes bulky and voluminous.

To overcome the shortcomings of the use of the journal only as a book of original entry, the journal is sub-divided into special journals. It is sub-divided in such a way that a separate book is used for each category of transactions, which are repetitive in nature and are sufficiently large in number. Subsidiary books refer to the journals meant for specific transactions of similar nature.

The proforma and number of special journals vary according to the requirements of each enterprise. In any large business, the following special journals are generally used:

Name of the special journal	Specific transactions to be recorded
I. Cash Journal (a) Single column cash book (b) Double column cash book (c) Triple column cash book (d) Petty cash book	Cash transactions Cash and discount transactions Cash, bank and discount transactions Petty cash transactions
II. Goods journal (a) Purchase book (b) Sales book (c) Sales returns book (or Return Inwards book) (d) Purchase returns book (or Return outwards book)	Credit purchase of goods Credit sales of goods Goods returned by those customers to whom goods were sold on credit Goods returned to those suppliers from whom goods were purchased on credit

III. Bills journal	
(a) Bills receivable book	Bills receivable drawn
(b) Bills payable book	Bills payable accepted
IV. Journal proper	Transactions not covered elsewhere

5.6 BENEFITS OF SPECIFIC JOURNALS

The benefits of using special journals are as under:

- (a) **Facilitates:** The accounting work can be divided among many persons.
- (b) **Permits the installation of internal check system:** The accounting work can be divided in such a manner that another person automatically checks the work of one person. With the use of internal check, the possibility of occurrence of error/fraud may be avoided.
- (c) **Permits the use of specialized skill:** The accounting work requiring specialized skill may be assigned to a person possessing the required skills. With the use of a specialized skill, prompt, economical and more accurate supply of accounting information may be obtained.
- (d) **Time and labour saving in journalizing and posting:** For instance, when a Sales Book is kept, the name of the sales account will not be required to be written down in the Journal as many times as the sales transactions occur and at the same time, sales account will not be required to be posted again and again since, only a periodic total of sales book is posted to the sales account.

5.7 CASH BOOK

A cash book is a special journal, which is used for recording all cash receipts and cash payments.

5.7.1 Cash book-both a journal and a ledger

The cash book is a book of original entry (or prime entry) since transactions are recorded for the first time from the source documents. The cash book is a ledger in the sense that it is designed in the form of a cash account and records cash receipts on the debit side and cash payments on the credit side. Thus, the cash book is both a journal and a ledger.

5.7.2 Types of cash book

The various types of cash book from the point of view of uses may be as follows:

1. **Single-column cash book:** This cash book has one amount column on each side. All cash receipts are recorded on the receipt side and all cash payments on the payment side. In fact, this book is nothing but a Cash Account. Hence, there is no need to open this account in the ledger. Its format is shown below:

SINGLE-COLUMN CASH BOOK

Receipts				Payments			
Date	Particulars	L.F.	Amount (Rs.)	Date	Particulars	L.F.	Amount (Rs.)

2. **Two-column cash book:** This cash book has two amount columns (one for cash and another for discount) one each side. All cash receipts and discount allowed are recorded on the receipt side and all cash payments and discount received are recorded on the payment side. Its format is shown as follows:

CASH BOOK WITH DISCOUNT COLUMN

Receipt					Payment				
Date	Particulars	L.F.	Discount (Rs.)	Cash (Rs.)	Date	Particulars	L.F.	Discount (Rs.)	Cash (Rs.)

3. **Three-column cash book:** This cash book has three amount columns (one for cash, one for bank and one for discount) on each side. All cash receipts, deposits into bank and discount allowed are recorded on receipt side and all cash payments, withdrawals from bank and discount received are recorded on the payment side. In fact, a three-column cash book serves the purpose of Cash Account as well as Bank Account. Hence, there is no need to open these two accounts in the ledger. Its format is shown below:

THREE-COLUMN CASH BOOK

Receipts						Payments					
Date	Particulars	L.F.	Discount (Rs.)	Cash (Rs.)	Bank (Rs.)	Date	Particulars	L.F.	Discount (Rs.)	Cash (Rs.)	Bank (Rs.)

Illustration 5.1: Prepare a three-column cash book from the following particulars of Jan. 2006:

1. Cash in hand Rs. 50,000
2. Paid into bank Rs. 10,000
3. Bought goods from Harris for Rs. 500 for cash.
4. Bought goods for Rs. 2,000 paid cheque for them, discount allowed 1%.
5. Sold goods to Mohan for cash Rs. 250.
6. Bank notified that Shay's cheque has been returned dishonoured and debited to the account in respect of charges Rs. 10.
7. Shay settled his account by means of a cheque for Rs. 820, Rs. 20 being interest charged.
8. Withdrew from bank Rs. 10,000.
9. Withdrew for personal use Rs. 1,000.
10. Paid trade expenses Rs. 2,000.
11. Withdrew from bank for private expenses Rs. 1,500.
12. Issued cheque to Ram Saran for purchase of furniture Rs. 1,575.
13. Rajesh who owned us Rs. 500 became bankrupt and paid us 50 paisa in a rupee.
14. Received payment of a loan of Rs. 5,000 and deposited Rs. 3,000 out of it into bank.
15. Paid rent to landlord by a cheque of Rs. 500.
16. Interest allowed by bank Rs. 30.

THREE-COLUMN CASH BOOK

Date	Particulars	L.F.	Discount (Rs.)	Cash (Rs.)	Bank (Rs.)	Date	Particulars	L.F.	Discount (Rs.)	Cash (Rs.)	Bank (Rs.)
2006						2006					
Jan. 1	To Balance c/d			50,000		Jan. 2	By Bank A/c	C		10,000	
2	To cash	C			10,000	3	By purchases A/c			500	
5	To Sales A/c			250		4	By Purchases A/c		20		1,980
6	To Shay		100		700	8	By Typewriter			200	
11	To Shay				800	9	By Shay		100		700
	To Interest				20		By Bank charges				10
12	To Bank	C		10,000		12	By Cash	C			10,000
29	To Rajesh			250		22	By Drawings			1,000	
30	To Loans			5,000		24	By Trade expenses			2,000	
30	To Cash	C			3,000	25	By drawings				1,500
	To Interest				30						
	To Balance c/d (Bank overdraft)		120		1,765	27	By Furniture				1575
						30	By Bank			3000	
						30	By Rent				500
							By Bank charges				50
							By Balance c/d			49,100	
Total			120	65,500	16,315		Total		120	65,500	16315

Contra entry: An accounting transaction involves two accounts and there may be a transaction where both cash account and bank account are involved. Since in the ledger there is no separate cash account and bank account, therefore, no posting will be done from the cash book to the ledger in case of such a transaction. The transaction will be recorded on both the side of the cash book. Such an accounting entry, which is recorded on the both the sides of the cash book, is known as contra entry. In order to give hint for the purpose the word 'C' is written in the ledger folio.

4. **Petty cash book:** This book is used for the purpose of recording the petty expenses so that the main cash book is relieved of the detailed records of these petty expenses. Normally, one person is handed over a small amount to meet the petty expenses of a given period (say, week, fortnight or month) and is authorized to make such payments and to record them in a separate cash book. Such person, such amount and such cash books are called as 'Petty Cashier', 'Imprest' and 'Petty cash Book' respectively. The Petty Cash Book may or may not be maintained on 'Imprest System'. Under both the systems (i.e. Imprest and Non-imprest), the petty cashier submits the Petty Cash Book to the Head Cashier who examines the Petty Cash Book. Under the Imprest system, the Head Cashier makes the reimbursement of the amount spent by the Petty Cashier but under Non-imprest system, the Head Cashier may handover the Cash to the Petty Cashier equal to/more than less than the amount spent. The format of Petty Cash Book may be designed according to the requirements of the business.

Receipts			Payments									
Date	Particulars	Cash Book Folio	Date	Particulars	Voucher No.	Postage Telegram (Rs.)	Conveyance Travelling (Rs.)	Staff Welfare Entertainment (Rs.)	Cartage (Rs.)	Printing and Stationary (Rs.)	Miscellaneous Items (Rs.)	Total

5.8 SUMMARY

According as an information system is the process of identifying, measuring and communicating the economic information of an organization to its users who need the information for making decisions. An accounting process is a complete sequence with the recording of the transactions and ending with the preparation of the final accounts. Journal is concerned with the recording of financial transactions in an orderly manner, soon after their occurrence. Maintaining the ledger in which different accounts are opened to which transactions are posted performs the function of systematic analysis of the recorded data to accumulate the transactions of similar type at one place. When number of transactions are large, it is practically impossible to record all the transactions through one journal, the journal is subdivided in such a way that a separate book is used for each category of transactions which are repetitive in nature and are sufficiently large in number. All such books are known as subsidiary books or special journals.

5.9 KEYWORDS

Cash book: Cash book is a book in which receipts and payment of cash are recorded.

Petty cash book: A petty cash book is used to record all cash payments of smaller demoniations.

Contra entry: If the same entry appears on both debit and credit side then the entry is referred to as contra entry.

5.10 SELF ASSESSMENT QUESTIONS

1. What is meant by posting? How is posting made from the journal in the ledger? Explain with suitable examples.

2. What do you understand by subsidiary books? Describe the purpose of preparing such books.
3. Pass necessary journal entries in the books of Hardener for the month of March 2001:
 - i) An old machinery appearing in books exchanged for a new machinery of Rs. 5,000.
 - ii) Issued a cheque for Rs. 1,000 in favour of landlord for a rent for the month of March.
 - iii) Paid electricity bill of Rs. 450 by cheque.
 - iv) The goods destroyed by theft Rs. 3,000.
 - v) Paid wages for the installation of machinery Rs. 5,000.
 - vi) Accrued interest Rs. 1100.
 - vii) Goods worth Rs. 4,000 given away by way of charity.
 - viii) Goods taken by Proprietor worth Rs. 10,000 for personal use.
4. Pass necessary journal entries and post them in the appropriate subsidiary books of Kampala for the month of January 2001:
 - i) Started business with Rs. 2,00,000 in the bank and Rs. 40,000 cash.
 - ii) Bought shop fitting Rs. 40,000 and a van Rs. 60,000, both paid by cheque.
 - iii) Paid rent by cheque Rs. 5,000.

- iv) Bought goods for resale on credit from Fakir and Co. Rs. 50,000.
- v) Cash sales Rs. 5,000.
- vi) Paid wages of assistant in cash Rs. 1,000.
- vii) Paid insurance by cheque Rs. 500
- viii) Cash sales Rs. 8,000
- ix) Goods returned to Fakir and Co. Rs. 6,000
- x) Paid Fakir and Co. Rs. 30,000 by cheque.
- xi) Bought stationery and paid in cash Rs. 500.
- xii) Cash sales Rs. 15,000.
- xiii) Paid Raju and Co. Rs. 14,000 by cheque.
- xiv) Paid Rs. 20,000 into the bank.

5.11 SUGGESTED READINGS

1. Aggarwal and Jain, Advanced Financial Accounting.
2. R.L. Gupta, Advanced Accountancy.
3. Sukhla and Grewal, Advanced Accounts.

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Lesson : 6

INVENTORY VALUATION METHODS

STRUCTURE

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6.0 OBJECTIVE

After reading this lesson, you should be able to

- (a) Understand the meaning and objectives of inventory valuation.
- (b) Describe the methods of recording and valuation of inventories.
- (c) Explain the advantages, disadvantages and suitability of various methods of inventory valuation.

6.1 INTRODUCTION

The literary meaning of the word inventory is stock of goods. To the finance manager, inventory connotes the value of raw materials,

consumable, spares, work-in-progress, finished goods and scrap in which a company's funds have been invested. It constitutes the second largest items after fixed assets in the financial statements, particularly of manufacturing organisation. It is why that inventory valuation and inventory control have become very important functions of the accountants and finance managers. The persons interested in the accounting information assume that the financial statements contain accurate information. However, it is often observed that the financial statements don't provide actual information about some of the items, e.g. inventory and depreciation. This may be because of the variety of inventory valuation methods available with the accountant.

According to the International Accounting Standard-2 (IAS-2), 'Inventories' mean tangible property held;

- (a) for sale in the ordinary course of business,
- (b) in the process of production for such sale, or
- (c) for consumption in the production of goods or services for sale.

Hence, the term inventory includes stock of (i) raw material and components, (ii) work-in-progress and finished goods. In case of manufacturing concern, inventory consists of raw materials, components, stores, semi-finished products and finished goods in case of a trading concern inventory primarily consists of finished goods.

6.2 OBJECTIVES OF INVENTORY VALUATION

Following are the objectives of inventory valuation:

a) Determination of Income: A major objective of inventory valuation is the proper determination of income through the process of matching appropriate cost against revenues. Gross profit is found out by deducting cost of goods sold from sales. Cost of goods sold is purchases plus opening stock minus closing stock. Hence, closing stock must be properly valued and brought into accounts. Over valuation of closing stock leads to inflation of the current year profits and deflation of the profits of succeeding years. Similarly, undervaluation leads to deflation of current years profit and inflation of the profit of the succeeding years.

b) Determination of financial position: In the balance sheet, 'inventory' is a very important item. It is to be shown as current asset in the balance sheet at the end of the year. If the inventory is not properly and correctly valued, to that extent the balance sheet does not give true and fair view of the financial position of the business. Keeping in view the above objectives the auditor's duty in relation to the verification and valuation of inventories becomes more important. Therefore, while verifying he should ensure that stock taking is done by responsible a officer, stock figures match with that of stock registers, and the basis of valuation has been consistently the same from year to year. Moreover, he should carry out test checks to ensure the accuracy of valuation.

6.3 METHODS OF RECORDING INVENTORY

The records of quantity and value of inventory can be made in two ways. These as follows:

- (i) Periodic Inventory System

(ii) Perpetual Inventory System

I) Periodic Inventory System: Under this system the quantity and value of inventory is ascertained by physically counting the stock at the end of the year and as on the accounting date. In case of big business houses, annual stock taking may even take a week at the end of the year in finalising the stock in hand on continuous basis. In case of this system certain items are physically counted, while others are weighed in kilos or tonnes or measured in liters. For stock taking stock sheets are used. The firms evolve such a performa of stock sheet on which all the relevant informations like particulars of inventory, numbers of units, price per unit, total value, etc. can be listed and added so as to get the figure of inventory. This method offers the advantage of simplicity. Also, there is no need to maintain the various records to be maintained under perpetual inventory system. However, the limitation of this method is that discrepancies and losses in inventory will never come to light as it makes no accounting for theft, losses, shrinkage and wastage.

II) Perpetual Inventory System: This system provides a running record of inventories on hand because under this method stock registers are maintained which will give the inventory balance at any time desired. According to the Institute of Cost and Management Accountants, London, it is “a system of records maintained by the controlling department which reflects the physical movement of stocks and their current balance.” The stores ledger will give the balance of raw materials, work-in-progress and finished goods on hand. Because of this it is for the management to provide for continuous stock-taking, so

that by comparing the physical balance with book balance, any discrepancies are ascertained immediately.

In this system business need not be suspended for the purpose of stock taking. The main advantage of this method is that it provides details about the quantity and value of stock of each item all times. Thus it provides a basis for control. The main drawback of this system is that it requires elaborate organisation and records and, therefore, it is more expensive.

6.4 METHODS OF VALUATION OF INVENTORIES

The basic methods of valuation of inventories are as follows:

- (a) Historical cost based method
- (b) Sale price based method
- (c) Lower of cost or sale price

Methods based on Historical cost

According to AS-2 historical cost is the aggregate of costs of purchases, costs of conversion and other costs incurred in the normal course of business in bringing the inventories to their present locations and condition. Cost of purchase comprises purchase price, duties and taxes, freight inwards and other expenditure directly attributable to acquisitions. However, selling expenses such as advertisement expenses or storage cost should not be included.

The valuation of inventory at cost price will be in consonance with the realisation concept. According to this concept, revenue is not realised until the sale is complete and the inventory is converted into

either cash or accounts receivable. There can thus be no recognition of revenue accretion except at the point of sale.

This is a method with very high objectivity since the inventory valuer has to base it on a transaction which is completely verifiable. The main limitation of this method is its inability to distinguish operational gains from holding gains during period of inflation. (**Note:** *Holding gain refers to profits which arises as a result of holding inventories during inflation*). They may be attributed to the fact that this method matches the past inventories against revenues which have current relations. Thus, this system will result in the inclusion of “inventory profits” (i.e. holding gain) in the income statements during periods of rising prices.

Now, we shall describe the various methods for assigning historical costs to inventory and goods sold.

1. First In First Out Method (FIFO): This method is based on the assumption that the materials which are purchased first are issued first. Issues of inventory are priced in order of their purchases. Inventory issues/sales are priced on the same basis until the first lot of material of goods purchased is exhausted. Thus, units issued are priced at the oldest cost price listed on the stock ledger sheets. Under this system it is not necessary that the material which were longest in stock are exhausted first. But the use of FIFO necessarily mean that the oldest costs are first used for accounting purposes. In practice, an endeavour is made by most business houses to sell of oldest merchandise or materials first. Hence when this system is followed the closing stock does not consist of most recently purchased goods.

Advantages. The following are the advantages of this method:

- (i) This method is easy to operate, provided the prices of materials do not fluctuate frequently.
- (ii) It gives such a value of closing stock which is vary near to current market prices since closing inventory is made of most recently purchased goods.
- (iii) It is a realistic method because it takes into account the normal procedure of issuing goods/inventory, i.e. the materials are issued to production in the order of their receipts.
- (iv) As it is based on historical cost, no unrealised profit enters into the financial statements for the period.

Disadvantages: This method suffers from the following limitations:

- (i) Because of violent changes in prices of materials, it involves somewhat complicated calculations and, therefore, it involves somewhat complicated calculations and, therefore, increase the changes of clerical errors.
- (ii) The prices of issues of materials may not reflect current market prices and, therefore, during the period of inflation, the charge to production is unreasonably low.
- (iii) Comparison between different jobs executed by the firm becomes sometimes difficult. A job commenced a few minutes before another job might have consumes the supply of lower priced stock. This is particularly because of that

the fact the first job might have completely exhausted the supply of materials of a particular lot.

Suitability: FIFO method is considered more suitable during the periods of falling prices. The reason is that the higher price at which the purchase of materials was made earlier stands recovered in cost. This method is suitable when the size of purchases is large but not much frequent. The moderate fluctuations in the prices of materials, and easy comparison between different jobs are also the important conditions for the use of this method.

Illustration 1: The following is the record of receipts of certain materials during the month of January 2006:

Jan. 2	Received 500 Units	@ Rs.20 per unit
Jan. 3	Received 400 Units	@ Rs. 21 per unit
Jan. 15	Received 300 Units	@ Rs. 19 per unit
Jan. 28	Received 400 Units	@ Rs. 20 per unit

The physical inventory taken on 31st January, 2006 shows that there are 600 units in hand. Compute the inventory value on 31st January, 2006 by FIFO method.

Solution: Under FIFO method, closing inventory includes recent purchases at most recent prices. Hence, the value of the inventory on 31st January will be as follows:

January 28	Purchases	400 units	@ Rs. 20	= Rs. 8000
January 15	Purchases	200 units	@ Rs. 19	= Rs. 3800
				Rs. 11, 800

Here, the value of inventory as on 31st January 2006 has been arrived as on the presupposition that the firm uses periodic inventory

system, the value of inventory would remain the same even if the perpetual inventory system is in use. To take an example, if out of 1000 units issued, 300 units were issued on January 5, while 700 units were issued on January 16, the valuation of inventory using perpetual inventory system will be done as follows:

STOCK LEDGER

Date	Receipts			Issues			Balance	
	Qty.	Rate	Amount (Rs.)	Qty.	Rate	Amount (Rs.)	Qty.	Amount (Rs.)
Jan.2	500	20	10,000	--	--	--	500	10,000
Jan.3	400	21	8,400	--	--	--	900	18,400
Jan. 5	--	--	--	300	20	6000	600	12,400
Jan.15	300	19	5,700	--	--	--	900	18,100
Jan.16	--	--	--	200	20	4,000		
				400	21	8,400		
				100	19	1,900	200	3,800
Jan.28	400	20	8,000	--	--	--	600	11,800

From the above stock ledger it is obvious that the value of ending inventory under FIFO method is same in case of both periodic and perpetual inventory systems.

2. Last in First Out Method (LIFO): Under this method, it is assumed that the material/goods purchased in the last are issued first for production and those received first issued/sold last. In case a new delivery is received before the first lot is fully used, price become the 'last-in' price and is used for pricing issued until either the lot is exhausted or a new delivery is received.

As stated above, materials are issued to production at cost which may be vary near to current marked price. However, inventories at the end will be valued at old prices which may be out of tune with the current maked price.

Advantages

- (i) This method takes into account the current market circumstances while valuing materials issued to various jobs or ascertaining the cost of goods sold.
- (ii) No unrealised profit or loss is usually made in case this method is followed.

Disadvantages

- (i) The stock in hand is valued at a price which have become out-of-date when compared with the current inventory prices.
- (ii) This method may not be acceptable for taxation purposes since the value of closing inventory may be quite different from the current market value.
- (iii) Comparison among similar jobs is very difficult because they may bear different issue prices for materials consumed.

Suitability: This method is most suitable for materials which are of a bulky and non-perishable type.

Illustration 2: With the information given in illustration (1), compute the inventory value on 31st Jan. 1998 by LIFO method. Also

prepare a store ledger account showing how the receipts and issues on 5th Jan and 700 units issued on 16th January 2006.

Solution: Under LIFO method, closing inventory includes most old purchases remaining unissued till last date. Hence, valuation of inventory under periodic inventory system would be as follows:

Hence, the value of the inventory on 31st January will be as follows:

Jan. 2	Purchases	200 units	@Rs.20	= Rs. 4,000
Jan. 28*	Purchases	400 units	@Rs.20	= Rs.8,000
				Rs. 12,000

Valuation of Inventory under perpetual inventory system

STOCK LEDGER

Date	Receipts			Issues			Balance	
	Qty	Rate	Amt. (Rs.)	Qty	Rate	Amt. (Rs.)	Qty	Amt. (Rs.)
Jan 2	500	20	10,000	-	-	-	500	10,000
Jan 3	400	21	8,400	-	-	-	900	18,400
Jan 5	-	-	-	300	21	6,300	600	12,100
Jan 15	300	19	5,700	-	-	-	900	17,800
Jan 16	-	-	-	300	19	5,700		
				100	21	2,100		
				300	19	6,000	200	4,000
Jan 28	400	20	8,000	-	-	-	600	12,000
Jan 31	-	-	-	-	-	-	600	12,000

*Closing entry of 600 units includes 200 units purchased on 2nd January but remained unissued and 400 units purchased on 28th January remaining unissued upto 31st January.

Implications of FIFO and LIFO method in case of rising and falling prices: Both these methods value the products manufactured at true costs because both are based on actual cost. But in period of rising and falling prices both have conflicting result.

In periods of rising prices the cost of production will be lower in case of FIFO method. This is simply because of the lowest material cost. Contrary to this, LIFO method will result in charging products at highest materials cost. Thus in case of rising price the application of FIFO method will result in higher profitability, and higher income tax liability, whereas the application of LIFO method result in lower profitability, which in turn will reduce income tax liability.

In periods of falling market, the cost of product will tend to be low with reference to the overall cost of inventory in case material cost is to be charged according to LIFO method. Hence, this method will be resulting in inflating of profits and increasing the tax liability. The reverse will be the case if FIFO method is followed. Production will be relatively overcharged. This will deflate the profits and reduce the income tax liability.

In periods of falling prices the ending inventory will be valued in FIFO method at a price lower than in case of LIFO method. The reverse will be the case when the prices are rising. Interestingly, on the basis of above discussion, it may be concluded that in periods of falling prices, LIFO method tends to give a more meaningful balance sheet but less

realistic income statement, whereas FIFO method gives a more meaningful income statement but a less realistic balance sheet. The reverse will be the situation in periods of rising prices.

Now the question arises about the superiority of the LIFO and FIFO methods. Based on forgoing discussion about implications of these methods in case of both rising and falling markets, it may be concluded that each method has its own merits and demerits depending upon the circumstances prevailing at a particular moment of time. Thus, no generalisation can be made regarding superiority of LIFO over FIFO or vice-versa.

3. Highest-in-First-out (HIFO): According to this method, the highest priced materials are treated as being issued first irrespective of the date of purchase. In fact, the inventory of materials or goods are kept at the lowest possible price. In periods of rising prices the closing inventory is undervalued and thus secret reserves are created. However, the highest cost of materials is recovered first. Consequently, the closing inventory amount remains at the minimum value. Hence, this method is very appropriate when the prices are frequently fluctuating. As this method involves calculation more than that of LIFO and FIFO methods, it has not been adopted widely.

4. Base stock method: The base stock method assume that each business firm whether small or large must held a minimum quantity of materials finished foods at all times in order to carry on business smoothly. These minimum quantity of inventories are valued at the cost at which the base stock was acquired. It is assumed that the base stock is created out of the lot purchased. Inventories over and

above the base stock are valued according to some other appropriate method such as FIFO, LIFO, etc.

AS-2 recommends the use of this method in exception circumstances only. This is because of the fact that a large number of companies customarily maintain a minimum stock level at all times irrespective of its requirement. Actually, sometimes base stock method is used without its justification. Therefore, this method requires a clear existence of the circumstances which require that a minimum level of charging out inventory of raw material and finished goods at actual cost along with merits and demerits of the method which is used for valuation other than the base stock method.

5. Specific Identification Method: Under this method, each item of inventory is identified with its cost. The value of inventory will be constituted by the aggregate of various cost so identified. This method is very suitable for job order industries which carry out individual or goods have been purchased for a specific job or customer. In other words, this method can be applied only where materials used can be specifically and big items such as high quality furniture, paintings, metal jewellery, cars, etc.

However, this method is not appropriate in most industries because of practical problems. For instance, in case of manufacturing company having numerous items of inventory, the task of identifying the cost of every individual item of inventory becomes very cumbersome. Also, it promotes the chances of manipulating the cost of goods sold. It can be done by selecting items that have a relatively high cost or a relatively low cost, as he desires.

Example: Suppose that following information is available from records:

Opening inventory of material as on Jan. 1 , 2000 at Rs.20 = 200 units.

Purchases of materials as on Jan. 16, 2000 at Rs. 24 = 100 units.

Purchases of materials as on Jan.26, 2000 at Rs.30 = 150 units

Total units available for sale = 450 units

Units sold during January = 260 units

Inventory of materials at January end = 190 units

Now, if it assumed that the firm selected 200 items of materials that had a unit cost of Rs. 20 and 60 units of items that had a unit cost Rs. 24, the cost of goods sold for the firm would be as follow:

$$\text{Cost of 200 items} = 200 \times 20 = \text{Rs. 4000}$$

$$\text{Cost of 60 items} = 60 \times 24 = \text{Rs. 1440}$$

Rs. 5440

Whereas, if 260 items having highest cost are selected, then the cost of goods sold would be Rs. 7100 [(150×30) + (100×24) + (10×20)].

5. Simple average Price (SAP): This is the average of prices of different lots of purchase. Under this method no consideration is given to the quantity of purchases in various lots. For example the purchases of 500 units of materials at Rs. 10 per unit are made as on 5th January, 1995 and 800 units of materials at Rs. 14 per unit on 10th January. If at the end 200 units remains unissued/unsold, these will be valued at Rs. 12 = [(10 + 14)/2]per unit and hence, the closing inventory will be shown at Rs. 2400 (200 × 12 = 2400). Infact, this method operated on the principle that when items of materials are purchased in

big lots and are put in godown, their identity is lost and, therefore, issues should be priced at the average price of the lots in godown.

6. Weighted Average Price (WAP): Under this method, the quantity of material purchased in various lots of purchases is considered as weight while pricing the materials. Weighted average price is calculated by dividing the total cost of material in stock by the total quantity of material at the end. When this method is adopted, the question of profit or loss out of varying prices does not arise because it evens out the effect of widely fluctuating prices of different lots of purchases. This method is very popular because it reduces calculations and is based on quantity and value of material purchased.

Illustration 3: The following are the details of transactions regarding receipt and issue of materials:

Date	Quantity received	Rate	Quantity issued
Jan.2, 2006	100	Rs. 1.00	—
Jan.9, 2006	150	Rs. 1.20	—
Jan.14, 2006	—	—	125
Jan.17, 2006	250	Rs. 1.30	—
Jan.19, 2006	—	—	100

You are required to prepare a stock ledger pricing the issue at (i) Simple average price and (ii) Weighted average price.

Solution

(i) Simple Average Price Method:

STOCK LEDGER

Date	Receipts			Issues			Balance	
	Qty.	Rate	Amount	Qty.	Rate	Amount	Qty.	Amount
2006								
Jan.2	100	1.00	100	—	—	—	100	100
Jan.9	150	1.20	180	—	—	—	250	280
Jan.14	—	—	—	125	1.10 ^a	137.50	125	143
Jan.17	250	1.30	325	--	—	—	375	518
Jan.19	—	—	—	100	1.25 ^b	125.00	275	393

Working Notes

Average price on 14.1.2006 = $(1.00 + 1.20)/2 = \text{Rs. } 1.10$

Average price on 19.1.2006 = $(1.20 + 1.30)/2 = \text{Rs. } 1.25$

The price of the purchases that were made on 2nd January has been ignored while computing average price on 19.1.2006 since we have assumed that issue of 125 units on 14.1.2006 comprises all the 100 units purchased on 2.1.2006.

(i) Weighted Average Price Method

Date	Receipts			Issues			Balance	
	Qty.	Rate	Amt	Qty.	Rate	Amt	Qty.	Amt
2006								
Jan.2	100	1.00	100	--	--	--	100	100
Jan.9	150	1.20	180	--	--	--	250	280
Jan.14	--	--	--	125	1.12	140	125	140
Jan.17	250	1.30	325	--	--	--	375	465
Jan. 19	--	--	--	100	1.24	124	275	341

Working Notes

Weighted average price on January 14 = $280/250 = 1.12$

Weighted average price on January 19 = $465/375 = 1.24$

Illustration 4: The Hisar Dal Mills Ltd. does not maintain a perpetual inventory of gram which it buys and issues to the mills. The physical inventory taken of 31st March, 2005 shows the following quantity of gram on hand:

10 tonnes @ 840 per tonne.

The purchases during April as follows:

5-4-1995	100 tonnes	@ 850 per tonne
15-4-1995	50 tonnes	@ Rs. 900 per tonne
29-4-1995	10 tonnes	@ Rs. 920 per tonne

A physical inventory on 30th April, 2005 shows a stock of 15 tonnes of gram on hand. Complete inventory value on 30th April, 2005 by (i) FIFO method (ii) Weighted Average Price Method.

Solution

(i) **FIFO Method.** In case of FIFO method, earlier purchases are charged to earlier issues and the ending inventory includes the most recent purchases at the most recent prices. Thus, stock of 15 tonnes include 10 tonnes @ Rs. 920 per tonne purchased on 29-4-2005 and 5 tonnes @ Rs. 900 per tonne purchased on 15-4-2005. The inventory valuation will be as follows:

10 tonnes	@ Rs. 920 per tonne	Rs. 9,200
5 tonnes	@ Rs. 900 per tonne	Rs. 4,500
Inventory value on 30.4.05		Rs. 13,700

(ii) Weighted Average Price Method

10 tonnes	@Rs. 840	8,400
100 tonnes	@Rs. 850	85,000
50 tonnes	@Rs.900	45,000
10 tonnes	@Rs. 920	9200
170 tonnes		1,47,600

Average price per tonne = $1,4,600/170 = 868.24$

Closing inventory (30-4-05): 15 tonnes @ Rs. 868.24=Rs. 13,023.60

B. Method Based on Sale Price: The inventories may be valued at marked or sale prices. Important among these prices are current selling prices, and net realisable value. Both of these are discussed as follows:

1. Current Selling Prices: The method is used in case of the product of which market as well as prices are controlled by a Government. Marketing costs being negligible are ignored under this method. This method is followed in the case of sugar industries, metal industries, etc.

2. Net Realisable Value. According to IAS-2, the net realisable value means, “the estimate selling price in the ordinary course of business costs of completion and less costs necessarily to be incurred in order to make the sale.” Estimates of net realisable value should not be guided by temporary fluctuations in market prices. However, these should be arrived at after taking into consideration all expenses which might have to be incurred for making sales. Such cases where it is difficult to estimate the appropriate costs, say agriculture

output, inventory are valued consistently at market values. This procedure of valuation is accepted because of the saleability of the output at quoted prices.

C. The Lower of Cost or Market Price (LCM Rule)

This method is based on the accounting principle of conservatism according to which profits should not be anticipated but all losses foreseen should be provided for. For instance, the ending inventory consist of items purchased at cost of Rs.210 per unit. But the market price has fallen to Rs.200 per unit at the time of valuation of inventory. Hence, the items should be valued at Rs.200 per unit. This rule violate the matching concept which requires matching of revenues with the related product costs. This method also leads to inconsistency since in one year the valuation may be based on cost while in another it may be based on market price. However, even the critics of this rule favour the application of this rule for valuing obsolete or damaged inventories.

About inventories valuation AS-2, recommends that the general rule of valuing inventories should be at lower of historical cost and net realisable value subject to certain exceptions. The historical of the inventories should normally be determined by using 'FIFO', 'LIFO' or Average 'Cost' method. Inventory of by-products cannot be separately determined. It should be valued at net realisable value.

LCM rule can be applied in anyone of the following ways:

- 1. Aggregate/total inventory method:** In this method, cost price of the total inventory is ascertained and then compared with total net realisable price to arise at stock valuation.

2. Group Method: Under this method, groups are formed of similar or interchangeable articles of inventory. The cost and the net realisable value of each group so formed are found out. The LCM rule is applied to each group.

3. Item-by-item-method: According to this method, the cost and net realisable prices of each item of inventory are found out and the lower of the figures is taken into account for valuation of inventory. Both IAS-2 and AS-2 have recommended the use of “Group method” and “Item-by-Item” method for valuation of inventory. The first method namely “Aggregate or Total Inventory method” have not been recommended by both the standards. The learner’s will understand the difference between all the three methods from the following illustration.

Illustration 5: Given the following data about inventors as at 31st December, 2005.

Category	No. of Items	Cost (Rs.)	Net Realisable Value (Rs.)
A	10	21	20
A	16	15	14
B	20	30	40
B	10	18	16
C	9	40	45
C	7	30	25
D	8	8	10
D	8	6	5

Calculate the value of inventory on the basis of lower of cost and net realisable value (1) by the aggregate method, (2) by the group and (3) by item-by-item method.

Solution

1. Aggregate Method:

Quantity	Unit Price		Quantity X Price		LCM (Rs.)
	Cost (Rs.)	Net realisable Value (Rs.)	Cost (Rs.)	Net Realisable Value (Rs.)	
10	20	21	200	210	
16	15	14	240	224	
20	30	40	600	800	
10	18	16	180	160	
9	40	45	360	405	
7	30	25	210	175	
8	8	10	64	80	
8	6	5	48	40	
			1902	2094	1902

2. Group Method:

Group	Qty	Unit Price		Qty X Price		Lower of cost or net Realisable value
		Cost (Rs.)	Net Realisable Value	Cost (Rs.)	Net Realisable Value	
Group A	10	20	21	200	210	434
	16	15	14	240	224	
				440	434	
Group B	20	30	40	600	800	

Group C	10	18	16	180	160	780
				780	960	
	9	40	45	360	405	
Group D	7	30	25	210	175	570
				570	580	
	8	8	10	64	80	
	8	6	5	48	40	
				112	120	
					1896	

3. Item-by-item method

Quantity	Unit Price		Quantity X Price		Lower of Cost or Net Realisable Value (Rs.)
	Cost (Rs.)	Net realisable value (Rs.)	Cost (Rs.)	Net realisable value (Rs.)	
10	20	21	200	210	200
16	15	14	240	224	224
20	30	40	600	800	600
10	18	16	180	160	160
9	40	45	360	405	360
7	30	25	210	175	175
8	8	10	64	80	64
8	6	5	48	40	40
					1823

5. Valuation of inventory for Balance Sheet purpose

In certain cases, it is not possible for the business to take inventory on the date of balance sheet. It might have been taken on a date earlier or later than the date of balance sheet. In such a case, when student are required to calculate the value of stock on the date of preparation of final accounts, then they should take into consideration

information about additional transactions which occur during the period. For example, if value of stock on 28th March is given, then in order to find the value of stock on 31st March all purchases between these dates will be added. Likewise, if value of stock on 4th April is given and value of stock on the preceding 31st March is required then purchases during the period will be deducted and issues/sales (at acquisition price) during this period will be added. Both of the above mentioned cases could be understood and elaborated as under:

- (i) When the Position of stock is given on a date prior to the balance sheet date

In this case, the following adjustments will generally be required:

- (a) Add purchases made during the period.
- (b) Deduct purchases returns during the said period.
- (c) Deduct inventory issued/sold between the two dates.
- (d) Add sales returns between the two dates.

- (ii) When the position of stock is given on a date after the balance sheet date

For example, if the balance sheet is to be prepared as on 31st March, 2005 and the stock position has been given as on 15th April, 2005 the following adjustments will be required:

- (a) Less purchases made between 1st April, 2005 to 15th April, 2005.
- (b) Add purchases returns between 1st April, 2005 to 15th April, 2005.
- (c) Add sales (at cost price) between 1st April, 2005 to 15th April, 2005.

- (d) Less sales returns between 1st April, 2005 to 15th April, 2005.

Illustration 6: The financial year of Sultan S. & Co. ends on 31st December 2005. Stock taking continues upto 10th January, 2006. You are required to determine, the value of costing stock (at cost) as on 31st December, 2005 from the following information:

- (i) The closing stock (valued at cost) came to Rs. 50,000 on 10th January, 2006.
- (ii) Purchases made in the first 10 days of January 2006 amounted to Rs. 2000.
- (iii) Sales made from 1st January to 10th January in 2006 amounted to Rs. 8000. The firm makes a gross profit of 25% on sales.

Solution: Valuation of closing stock

Value of stock as on January 10, 2006	50,000
Less: Purchases after 31 st December	2,000
	48,000
Add: Cost of goods sold during first 10 days of January, 2006 (75% of 8000)	6,000
Value of stock as on 31 st Dec. 2005	54,000

Illustration 7: The financial year of Mr. Ratan Lal & Co. ends on 30th June 2006, but the actual stock is physically only on 7th July, 2006, when it is estimated at Rs. 20,000.

Additional information:

1. Purchases between 30th June and July are Rs. 2000.

2. Purchases returns between 30th June and 7th July are Rs. 200.
3. Sales between 30th June and 7th July are Rs. 4000.
4. Sales returns between 30th June and 7th July are Rs. 100.
5. The firm makes a gross profit at 25% on cost.

Calculate the value of stock on 30th June, 2006.

Solution

MR RATAN LAL & CO.
VALUATION OF CLOSING STOCK

Stock as on July 7	Rs. 20,000
Less: Purchases between June 30 and July 7	2,000
	18,000
Add: Purchases returns between June 30 and July 7	200
	18,200
Add: Sales (at cost price) between June 30 and July 7 [4000-one fifth of 4,000]	3,200
	21,400
Less: Sales returns (at cost price) between June 30 and July 7 [Rs.100-20]	80
Stock on June 30, 2006	21,320

Illustration 8: The Profit and Loss Account of Cardamom for the year ended 31st December, 2005 showed a net profit of Rs. 2,400 after taking into account the closing stock of Rs. 2,400. On a scrutiny of the books the following information could be obtained:

- (1) Cardamom has taken goods valued Rs. 800 for his personal use without making entry in the books.
- (2) Purchases of the year included Rs. 400 spent on acquisition of a ceiling fan for his shop.
- (3) Invoices for goods amounting to Rs.2600 have been entered on 29th December, but such goods were not included in stock.
- (4) Rs. 350 have been included in closing stock in respect of goods purchased and invoiced on 28th December, 2005 but included in purchases for January 2006.
- (5) Sale of goods amounting to Rs. 405 sold and delivered in December, 2005 had been entered in January, 2006 sales.

You are required to ascertain the correct amount of closing stock as on 31st December, 2005 and the adjusted net profit for the year ended on that date.

Solution

Calculation of stock as on December 31, 2005:

Stock (as given already)	Rs. 2400
Add Purchase not included	Rs. 2600
	Rs. 5000

PROFIT AND LOSS ADJUSTMENT ACCOUNT

	Rs.		Rs.
To supplier's account*	350	By Profit (given)	2,400
To Net Profit (balancing figure)	6,255	By Drawings	800

		By Fixtures and Fittings (Ceiling Fan)	400
		By Closing Stock (Goods in transit)	2,600
		By Customer's account	405
	6,605		6,605

*The treatment of these items in 2006 will have to be cancelled.

6.6 SUMMARY

The word 'inventory' means stock of goods. To the finance manager, inventory connotes the value of raw materials, consumable, spares, work-in-progress, finished goods and scrap in which a company's funds have been invested. A major objective of inventory valuation is the proper determination of income through the process of matching appropriate cost against revenues. The records of quantity and value of inventory can be made in two ways: (i) Periodic inventory system; (ii) Perpetual inventory system. The basic methods of valuation of inventories are: (a) Historical cost based method; (b) Sale price based method; (c) Lower of cost or sale price

6.7 KEYWORDS

Market Price: Market price means net realisable value in the ordinary course of business.

Cost: Cost means the total of the amount paid to the supplier and the expenses incurred till the goods reach the firm's premises but expenses thereafter will not be included.

Periodic Inventory System: In this system, the quantity and the value of inventory is ascertained by physically counting the stock at the end of the year and as on the accounting date.

Net Realisable Value: It is the estimated selling price in the ordinary course of business less the estimated cost of completion and the estimated costs necessary to make the sale.

6.8 SELF ASSESSMENT QUESTIONS

1. What are the various methods of inventory valuation? Discuss the impact of each method on working results.
2. What is the principle behind valuation of inventory at cost or market price whichever is lower?
3. Differentiate the following:
 - (a) LIFO and FIFO method
 - (b) Periodic inventory valuation and Perpetual inventory valuation
 - (c) Item-by-item method and Group method
4. What is the need of valuing inventory properly? Discuss. To what extent this need is fulfilled by various methods of valuing inventories.
5. Arvind Ltd. uses large quantities of a sweetening material for its products. The following figure relates to this material during the calendar year 2000:

Quarter ended (Tonnes)	Purchases	Invoice Cost per Tonne Rs.	Consumption (Tonnes)
March 31	1,000	620	600

June 30	2,100	630	1,200
September 30	700	640	1,500
December 31	1,200	670	1,350

The stock of material on December 31, 1999 was 1,000 tonnes valued for accounting purposes at cost of Rs. 600 a tonne. Delivery of goods to the factory is made on the first day of each quarter. You are required to compute the value of stock as on December 31, 2000 applying LIFO and FIFO methods.

6. Purchases of certain product during March, 2004 are set out below:

March 1	100 units	@ Rs. 10
12	100 units	@ Rs. 9.80
15	50 units	@ Rs. 9.60
20	100 units	@ Rs. 9.40

Units sold during the month were as follows:

March 10	80 units
14	100 units
30	90 units

No opening inventories

You are required to determine the cost of goods sold for March under three different valuation methods viz, FIFO, LIFO and Weighted Average Cost.

7. M/s Swadeshi Cotton Mills Ltd. take a periodic inventory of their stock of chemically at the end of each month. The physical inventory taken on 30 shows a balance of 1,000 litres of chemically in hand @ Rs. 2.28 per litre.

The following purchases were made during July:

July 1	14,000 litres	@ Rs. 2.30 per litre
July 7	10,000 litres	@ Rs. 2.32 per litre
July 1	14,000 litres	@ Rs. 2.30 per litre
July 25	5,000 litres	@ Rs. 2.35 per litre

A physical inventory on July 31 discloses that there is a stock of 10,000 litres. You are required to compute the inventory value on July 31, by each of the following methods:

(i) First in First out; (ii) Last in First out; and (iii) Average cost method.

8. Following are the details regarding inventories of a manufacturing concern as on 31st December, 2005:

Inventories categories	Cost (Rs.)	Market Prices (Rs.)
Category 1: A	6,000	9,000
B	10,000	9,500
Category 2: C	15,000	17,000
D	20,000	14,000
Total	51,000	49,000

You are required to determine inventory value using “lower of cost or market value basis”, according to each of the following methods:

(i) Aggregate or total inventory method; (ii) Group method; (iii) Item-by-item method.

9. The financial year of Shri X ends on 31st March, 2004, but the stock in hand was physically verified only on 7th April, 2004. You are required to determine the value of closing stock (at cost) as at 31st March, 2004 from the following information:

- (i) The stock (valued at cost) as verified on 7th April, 2004 was Rs. 15,000.
- (ii) Sales have been entered in the sales day book only after the despatch of goods and sales returns only on receipt of goods.
- (iii) Purchases have been entered in the purchases day book on receipt of the purchases invoice irrespective of the date of the goods.
- (iv) Sales as per the sales day book for the period 1st April, 2004 to 7th April, 2004 (before the actual verification) amounted to Rs. 6,000 of which goods of a sale value of Rs. 1,000 had not been delivered at the time of verification.
- (v) Purchases as per the purchases day book for the period 1st April, 2004 to 7th April, 2004 (before the actual verification) amounted to Rs. 6,000 of which goods for purchase of Rs. 1,500 had not been received at the date of verification and goods for purchases of Rs. 2,000 had been received prior to 31st March, 2004.
- (vi) In respect of goods costing Rs. 5,000 received prior to 31st March invoices had not been received up to the date of verification of stock.
- (vii) The gross profit is 20% on sales.

6.9 SUGGESTED READINGS

1. Financial Accounting by Tulsian.
2. Introduction to Financial Accounting by S.N. Maheshwari.
3. Advanced Accountancy by R.L. Gupta.

SUBJECT : ACCOUNTING FOR MANAGERS

COURSE CODE : CP-104

UPDATED BY: DR. M.C. GARG

LESSON NO. : 7

DEPRECIATION ACCOUNTING AND POLICY

STRUCTURE

- 7.0 Objective
- 7.1 Meaning of Depreciation
- 7.2 Causes of Depreciation
- 7.3 Need for Providing Depreciation
- 7.4 Basic Elements of Depreciation
- 7.5 Methods of Calculating Depreciation
- 7.6 Methods of Recording Depreciation
- 7.7 Sale of an Asset
- 7.8 Change of Depreciation Method
- 7.9 Summary
- 7.10 Keywords
- 7.11 Self Assessment Questions
- 7.12 Suggested Readings

7.0 OBJECTIVE

After reading this lesson, you should be able to

- (a) Define depreciation and describe the causes of depreciation.
- (b) Discuss the various methods of charging depreciation.
- (c) Explain the accounting treatment of depreciation

7.1 MEANING OF DEPRECIATION

Generally, the term depreciation is used to denote decrease in value but in accounting, this term is used to denote decrease in the book value of fixed asset. Depreciation is the permanent and continuous decrease in the book value of a fixed asset due to use, affluxion of time, obsolescence, expiration of legal rights or any other cause. According to the Institute of Chartered Accountants of England and

Wales, “Depreciation represents that part of the cost of a fixed asset to its owner which is not recoverable when the asset is finally out of use by him. Provision against this loss of capital is an integral cost of conducting the business during the effective commercial life of the asset and is not dependent on the amount of profit earned”.

Depreciation is not the result of fluctuations in the value of fixed assets since, the fluctuation is concerned with the market price of the fixed asset whereas the depreciation is concerned with the historical cost.

An analysis of the definition given above highlights the characteristics of depreciation as follows :

- (a) It is related to fixed assets only.
- (b) It is a fall in the book value of an asset.
- (c) The fall in the book value of an asset is due to the use of the asset in business operations, effluxion of time, obsolescence, expiration of legal rights or any other cause.
- (d) It is a permanent decrease in the book value of an asset.
- (e) It is a continuous decrease in the book value of an asset.

Depreciation, Depletion and Amortisation

The terms depreciation, depletion and amortisation are used often interchangeably. However, these different terms have been developed in accounting usage for describing this process for different types of assets. These terms have been described as follows:

Depreciation

Depreciation is concerned with charging the cost of man made fixed assets to operation (and not with determination of asset value for the balance sheet). In other words, the term 'depreciation' is used when expired utility of physical asset (building, machinery, or equipment) is to be recorded.

Depletion

This term is applied to the process of removing an available but irreplaceable

resource such as extracting coal from a coal miner or oil out of an oil well. Depletion differs from depreciation in that the former implies removal of a natural resource, while the latter implies a reduction in the service capacity of an asset.

Amortisation

The process of writing off intangible assets is termed as amortisation. The intangible assets like patents, copyrights, leaseholds and goodwill are recorded at cost in the books of account, Many of these assets have a limited useful life and are, therefore, written off.

Obsolescence

It refers to the decline in the useful life of an asset because of factors like (i) technological advancements, (ii) changes in the market demand of the product, (iii) legal or other restrictions, or (iv) improvement in production process.

Meaning of Depreciation Accounting

According to the American Institute of Certified Public Accountants (AICPA), “Depreciation Accounting is a system of accounting which aims to distribute cost or the basic value of tangible capital assets less salvage (if any), over the estimated useful life of the unit (which may be group of assets) in a systematic and rational manner. It is a process of allocation and not of valuation.

7.2 CAUSES OF DEPRECIATION

The main causes of depreciation include the following :

- (a) **Physical wear and tear** : When the fixed assets are put to use, the value of such assets may decrease. Such decrease in the value of assets is said to be due to physical wear and tear.
- (b) **With the passage of time** : When the assets are exposed to the forces of nature like whether, winds, rains, etc., the value of such assets may decrease even if they are not put to any use.
- (c) **Changes in economic environment** : The value of an asset may decrease due to decrease in the demand of the asset. The demand of the asset may decrease due to technological changes, changes in the habits of consumers etc.

(d) **Expiration of legal rights :** When the use of an asset (e.g., patents, leases) is governed by the time bound arrangement, the value of such assets may decrease with the passage of time.

7.3 NEED FOR PROVIDING DEPRECIATION

The need for providing depreciation in accounting records arises due to any one or more of the following objectives to be achieved :

(a) **To ascertain true results of operations :** For proper matching of costs with revenues, it is necessary to charge the depreciation (cost) against income (revenue) in each accounting period. Unless the depreciation is charged against income, the result of operations would stand overstated. As a result the Income Statement would fail to present a true and fair view of the result of operations of an accounting entity.

(b) **To present true and fair view of the financial position :** For presenting a true and fair view of the financial position, it is necessary to charge the depreciation. If the depreciation is not charged, the unexpired cost of the asset concerned would be overstated. As a result, the Position Statement (i.e. the Balance Sheet) would not present a true and fair view of the financial position of an accounting entity.

(c) **To ascertain the true cost of production :** For ascertaining the cost of production, it is necessary to charge depreciation as an item of cost of production. If the depreciation on fixed assets is not charged, the cost records, would not present a true and fair view of the cost of production.

(d) **To comply with legal requirements:** In case of companies, it is compulsory to charge depreciation on fixed assets before it declares dividend [Sec. 205(1) of the Companies Act, 1956].

(e) **To accumulate funds for replacement of assets :** A portion of profits is set aside in the form of depreciation and accumulated each year to provide a definite amount at a certain future date for the specific purpose of replacement of the asset at the end of its useful life.

7.4 BASIC ELEMENTS OF DEPRECIATION

In order to assess depreciation amount to be charged in respect of an asset in an accounting period the following three important factors should be considered :

1. Cost of the asset : The knowledge about the cost of the asset is very essential for determining the amount of depreciation to be charged to the profit and loss account. The cost of the asset includes the invoice price of the asset less any trade discount plus all costs essential to make the asset usable. Cost of transportation and transit insurance are included in acquisition cost. However, the financial charges such as interest on money borrowed for the purchase for the purchase of the asset, should no be included in the cost of the asset.
2. Estimated life of the asset : Estimated life generally means that for how many years or hours an asset could be used in business with ordinary repairs for generating revenues. For estimating useful life of an asset one must begin with the consideration of its physical life and the modifications, if any, made, factors of obsolescence and experience with similar assets. Infact, the economic life of an asset is shorter than its physical life. The physical life is based mostly on internal policies such as intensity of use, repairs, maintenance and replacements. The economic life, on the other hand, is based mostly on external factors such as obsolescence from technological changes.
3. Scrap. Value of the Asset : The salvage value of the asset is that value which is estimated to be realised on account of the sale of the asset at the end of its useful life. This value should be calculated after deducting the disposal costs from the sale value of the asset. If the scrap value is considered as insignificant, it is normally regarded as nil

7.5 METHODS OF CALCULATING DEPRECIATION

The following are various methods of allocating depreciation in use :

1. Fixed instalment method or straight line method.
2. Machine hour rate method.
3. Diminishing Balance method.
4. Sum of years digits method
5. Annuity method
6. Depreciation Fund Method
7. Insurance Policy Method
8. Depletion Method.

1. **Straight Line Method** : This is also known as fixed instalment method. Under this method the depreciation is charged on the uniform basis year after year. When the amount of depreciation charged yearly under this method is plotted on a graph paper, we shall get a straight line. Thus, the straight line method assumes that depreciations is a function, of time rather than use in the sense that each accounting period received the same benefit from using the asset as every other period. The formula for calculating depreciation charge for each accounting period is :

$$\text{amount of annual Depreciation} = \frac{\text{Original cost of the fixed assets - residual value}}{\text{Estimated life in years}}$$

For example, if an asset cost Rs. 50,000 and it will have a residual value of Rs. 2000 at the end of its useful life of 10 years, the amount of annual depreciation will be Rs. 4800 and it will be calculated as follow :

$$\text{Depreciation} = \frac{\text{Rs. } 50,000 - 2000}{10 \text{ years}} = \text{Rs. } 4800$$

This method has many shortcomings. First, it does not take into consideration the seasonal fluctuations, booms and depression. The amount of depreciation is the same in that year in which the machine is used day and night to that in the another year in which it is used for some months. Second, it ignores the interest on the money spent on the acquisition of that asset. Third, the total charge for use of asset (i.e., depreciation and repairs) goes on increasing form year to year though the assets might have been use uniformly from year to year. For example, repairs cost together with depreciation charge in the beginning years is much less than what it is in the later year. Thus, each subsequent year is burdened with grater charge for the use of asset on account of increasing cost on repairs.

Illustration - I : H. Ltd. purchased a machinery on 1st January. 2000 for Rs. 29000 and spent Rs. 2000 on its cartage and Rs. 1,000 on its erection. Machinery is estimated to have a scrap value of Rs. 5000 at the end of its useful life of 5 year. The accounts are closed every year on 31st December. Prepare the machinery account for five years charging depreciation according to straight line method.

Solution :**Machinery Account**

Date	Particulars	Rs.	Date	Particulars	Rs.
1990	To Bank	22000	Dec. 31	By Depreciation	4000
Jan. 1	To Bank	2000	"	By Balance C/d	21000
	To Bank	1000			
		25000			25000
2001	To Balance b/d	21000	2001	By Depreciation	4000
Jan. 1			Dec.31	Balance c/d	17000
		21000			21000
2002	To Balance/b/c	17000	2002	By Depreciation	4000
Jan. 1			Dec. 31	By Balance c/d	13000
		17000			17000
2003	To Balance b/c	13000	2003	By Depreciation	4000
Jan. 1			Dec.31	By Balance	9000
		13000			13000
2004	To Balance b/d	9000	2004	By Depreciation	4000
Jan. 1			Dec.31	By Balance c/d	5000
		9000			9000

This method is very suitable particularly in case of those assets which get depreciated more on account of expire of period e.g. lease hold properties, patents, etc.

- 2. Machine Hour Rate Method :** In case of this method, the running time of the asset is taken into account for the purpose of calculating the amount of depreciation. It is suitable for charging depreciation on plant and machinery, air-crafts, gliders, etc. The amount of depreciation is calculated as follows :

$$= \frac{\text{Acquisition cost of the asset - scrap value}}{\text{Life of the Asset in hours}}$$

For example, if machinery has been purchased for Rs. 20000 and it will have a scrap value of Rs. 1000 at the end of its useful life of 1900 hours, the amount of depreciation per hour will be computed as follows :

(7)

$$\begin{aligned}
\text{Depreciation} &= \frac{\text{Acquisition cost of the asset - scrap value}}{\text{Life of the Asset in hours}} \\
&= \frac{\text{Rs. } 20,000 - 1000}{1900 \text{ hours}} \\
&= \text{Rs. } 10 \text{ per hour}
\end{aligned}$$

If in a particular year, the machine runs for 490 hours, the amount of depreciation will be Rs. 4900 (i.e., Rs. 10x490). It is obvious from this example that under machine hour rate method the amount of depreciation is closely related with the frequency of use of an asset. The simplicity in calculations and understanding is the main advantage of this methods. However, it can be used only in case of those assets whose life can be measured in terms of working time.

3. Written Down Value Method : This is also known as Diminishing Balance method. Under the diminishing balance method depreciation is charged at fixed rate on the reducing balance (i.e., cost less depreciation) every year. Thus, the amount of depreciation goes on decreasing every year. Under this method also the amount of depreciation is transferred to profit and loss account in each of the year and in the balance sheet the asset is shown at book value after reducing depreciation from it. For example, if an asset is purchased for Rs. 10,000 and depreciation is to be charged at 20% p.a. on reducing balance system then the depreciation for the first year will be Rs. 2000. In the second year, it will Rs. 1600 (i.e. 20% of 8000), in the third year Rs. 1280 (i.e. 20% of 6400) and so on. The rate of depreciation under this method can be computed by using the following formula :

$$\text{Depreciation rate} = 1 - \sqrt[n]{\frac{\text{Net scrap value}}{\text{Acquisition cost}}}$$

For example, if the cost of an asset is 27000, scrap value Rs. 3375, economic life 3 year, the rate of depreciation would be :

$$\begin{aligned}
\text{Depreciation Rate} &= 1 - \sqrt[3]{\frac{3375}{27000}} \\
&= 1 - \frac{15}{30} = 50\%
\end{aligned}$$

Merits of Diminishing Balance Method : (i) It is very easy to understand and calculate the amount of depreciation despite the early variation in the book value after depreciation (ii) This method put an equal burden for use of the asset on each subsequent year since the amount of depreciation goes on decreasing for each subsequent year while the charge for repairs goes on increasing for each subsequent year. (iii) This method has also been approved by the income tax act applicable in India (iv) Asset is never reduced to zero because if the rate of depreciation is (say) 20%. Then even when asset is reduced to very small value, there must remain the 80% of that small value as on written off balance.

Demerit : (i) It ignores the interest on the capital committed to purchase that asset. (ii) It does not provide adequately for replacing the asset at the end of its life. (iii) The calculation of rate of depreciation is not so simple. (iv) The formula for calculating the rate of depreciation can be applied only when there is some residual of the asset.

Suitability : This method is suitable in those cases where the receipts are expected to decline as the asset gets older and, it is believed that the allocation of depreciation of depreciation ought to be related to the pattern of assets expected receipts.

Illustration 2 : A company purchases Machinery on 1st April 1990 for Rs. 20,000. Prepare the machinery account for three years charging depreciation @ 25% p.a. according to the written Down value Method.

Machinery Account

Date	Particulars	Rs.	Date	Particulars	Rs.
1990 Apr. 1	To Bank	20000	2001 Mar. 31	By Depreciation	5000
				By Balance C/d	15000
		20000			20000
2001 Apr. 1	To Balance b/d	15000	2002 Mar. 31	By Depreciation	3750
				By Balance c/d	11250
		15000			15000
2002 Apr/	To Balance b/d	11250	2003 Mar. 31	By Depreciation	2812.5
				By Balance c/d	8437.5
		11250			11250

4. Sum of Years digits (SYD) Method: Under this method also the amount of depreciation goes on diminishing in the future years similar to that under diminishing Balance method.

For calculating the amount of depreciation to be charged to the profit and loss account this method takes into account cost, scrape value, and life of the asset. The following formula is used for determining depreciation :

$$= \frac{\text{Remaining life of the Assets at the end of the year} + 1}{\text{Sum of the digits representing the life of the asset}} \times \text{Acquisition Cost}$$

For example, an asset having an effective life of 5 years is purchased at a cost of Rs. 20,000. It is estimated that its scrap value at the end of its effective life will be Rs. 2000. The depreciation on this asset, if SYD method is followed, will be calculated as follows from one to five years :

Year		Depreciation Amount
1	=	_____ x 18000 = Rs. 6000
2.	=	_____ x 18000 = Rs. 4800
3.	=	_____ x 18000 = Rs. 3600
4.	=	_____ x 18000 = Rs. 2400
5.	=	_____ x 18000 = Rs. 1200

5. Annuity Method : Sofar we have described such methods of charging depreciation which ignore the interest factor. Also, some times it becomes inconvenient for a company to follow any of the methods discussed earlier. Under such circumstances the company may use some special depreciation systems. Annuity method is one of these special systems of depreciation. Under this system, the depreciation is charged on the basis that besides losing the acquisition cost of the asset the business also loses interest on the amount used for purchasing the asset. Here, interest refers to that income which the business would have earned otherwise if the money used in buying the asset would have been committed in

some other profitable investment. Therefore, under the annuity method the amount of total depreciation is determined by adding the cost of the and interest thereon at an expected rate. The annuity table is used to help in the determination of the amount of depreciation. A specimen of Annuity Table is as follows :

Annuity Table

Year	3%	4%	5%	6%
4	0.269027	0.275490	0.282012	0.288591
5	0.218335	0.224627	0.230975	0.237376
6	0.184598	0.190762	0.197012	0.203363
7.	0.160506	0.166610	0.172820	0.179135
8.	0.142456	0.148528	0.154722	0.161036
9.	0.128434	0.134493	0.140690	0.147022
10.	0.117231	0.12391	0.129505	0.135868

In case depreciation is charged according to this method, the following accounting entries are passed :

- (i) Purchase of an asset

Asset Account	Dr.
To Bank	
- (ii) For Charging interest

Asset Account	Dr.
To Interest Account	
- (iii) For Charging depreciation :

Depreciation Account	Dr.
To Asset Account	

Evaluation of Annuity Method

Merits : (i) This method keep into account interest on money spent on the purchase of the asset. (ii) The value of the asset become zero at the end of life.

Demerits. (i) This method is comparatively more difficult than the methods discussed so far. (ii) It makes no arrangement of money to replace the old asset with the new one at the expiry of its life. (iii) Under this method the burden on the profit and loss account is no similar in each year because the depreciation remains constant year after year but the interest goes on decreasing.

Illustration 3. On 1st January, 2000 a firm purchased a leasehold property for 4 year at a cost of Rs. 24000. It decides to depreciate the lease by Annuity Method by charging interest at 5% per annum. The Annuity Table shows that the annual necessary to write off Rs. 1 at 5% Rs. 0.282012. You are required to prepare the lease Hold Property Account for four years and show the net amount to be charged to the profit and loss account for these four years.

Lease Hold Property Account

Date	Particulars	Rs.	Date	Particulars	Rs.
2000 Jan. 1	To Bank	24000.00	2000 Dec. 31	By Depreciation	6768.29
	To interest	1200.00	Dec.31	By balance c/d	18431.71
		25200.00			25200.00
2001 Jan.1	To balance b/d	18431.71	2001 Dec.31	By Depreciation	6768.29
Dec.31	To Interest	921.59	Dec.31	By Balance c/d	12585.01
		19353.30			19353.30
2002 Jan.1	To balance b/d	12585.01	2002 Dec.31	By Depreciation	6768.29
Dec. 31	To Interest	629.25	Dec.31	By Balance c/d	6445.97
		13214.26			13214.26
2003 Jan.1	To balance b/d	6445.97	2003 Dec.31	By Depreciation	6768.29
Dec.31	To Interest	322.30		By Balance c/d	9000
					13000
		6768.27			6768.27

Net Amount chargeable to the profit and loss account

Year	Depreciation debited	Interest Credited	Net Charge against Profit
2000	6768.29	1200.00	5568.29
2001	6768.29	921.59	5846.70
2002	6768.29	629.25	6139.04
2003	6768.29	322.30	6445.99
Rs.	27073.16	3073.14	24000.02

6. Depreciation Fund Method : Business assets become useless at the expiry of their life and, therefore, need replacement. However, all the methods of depreciation discussed above do not help in accumulating the amount which can be readily available for the replacement of the asset its useful life comes to an end

Depreciation fund method takes care of such a contingency as it incorporates the benefits of depreciating the asset as well as accumulating the necessary amount for its replacement. Under this method, the amount of depreciation charged from the profit and loss account is invested in certain securities carrying a particular rate of interest. The interest received on the investment in such securities is also invested every year together with the amount of annual depreciation. In the last of the life of asset the depreciation amount is set aside interest is received as usual. But the amount is not invested because the amount is immediately needed for the purchase of new asset. Rather all the investments so far accumulated are sold away. Cash realised on the sale of investments is utilised for the purchase of new asset. The following accounting entries are generally made in order to work out this system of depreciation.

1. At the end of the first year

(i) for setting aside the amount of depreciation : The amount to be charge by way of depreciation is determined on the basis of sinking Fund Table given as an Appendix at the end of every book of accountancy.

Depreciation Account Dr.
To Depreciation Fund Account (or Sinking Fund A/c)

(ii) For investing the amount charged by way of depreciation :

Depreciation Fund Investment A/c Dr.
To Bank A/c

In the second and subsequent years

(i) For receiving interest. The interest on the balance of Depreciation Fund Investment outstanding in the beginning of each year will be received by the end of the year. This entry is :

Bank Account Dr.
To Depreciation Fund Account

(ii) For setting aside the amount of depreciation

Profit and Loss A/c Dr.
To Depreciation Fund A/c

(iii) For investing the amount

Depreciation Fund Investment A/c Dr.
To Bank A/c

(Annual instalment of depreciation and interest received invested)

3. In the last year

(i) For receiving interest :

Bank A/c Dr.
 To Depreciation Fund A/c

(ii) For setting aside the amount of depreciation

Profit and loss A/c Dr.
 To depreciation Fund A/c

Note : In the last year no investment will be made, because the amount is immediately required for the purchase of new asset.

(iii) For the sale of investment :

Bank A/c Dr.
 To Depreciation Fund Investment A/c

(iv) For the transfer of profit or loss on sale on investments : The profit or loss on the sale of these investments is transferred to the Depreciation Fund Account.

The entry for loss :

Depreciation Fund A/c Dr.
 To Depreciation Fund Investment A/c

The entry for profit

Depreciation Fund Investment A/c
 To Depreciation Fund A/c

(v) For the sale of old asset :

Bank A/c Dr.
 To asset A/c

(vi) The depreciation fund is transferred to asset account and any balance left in the asset account is transferred to profit and loss account. The entry is :

Depreciation Fund A/c. Dr.
 To asset A/c

(vii) The balance in Asset Account represents profit or loss. Therefore it will be transferred to the profit and loss account.

(viii) The cash realised on the sale of investments and the old asset is utilised for the purchase of new asset.

Illustration 4. Amitabh Company Ltd. purchased 4 year lease on January , 2000 for Rs. 60,000. The company decided to charge depreciation according to depreciation fund method. It is expected that investments will earn interest @5% p.a. Sinking Fund Table shows that Rs. 0.232012 invested each year will produce Rs. 1 at the end of 4 years at 5% p.a. At the expiry of lease , the Depreciation Fund Investments were sold for Rs. 45200. A new lease is purchased for Rs. on 1.1.2004. Show the journal entries and prepare the necessary accounts in the book the company.

Journal

Date	Particulars	Debit	Credit
1.1.2000	Lease A/c Dr. To Bank A/c (Being the purchase of lease)	60,000	60,000
31.12.00	Depreciation A/c Dr. To Depreciation Fund A/c (Being annual amount of depreciation as per sinking fund tables)	13920.7	13920.7
31.12.00	Depreciation Fund Investment A/c Dr. To Bank A/c (Being purchase of the investments against the depreciation fund)	13920.7	13920.7
31.12.01	Bank A/c Dr. To depreciation fund A/c (Being the receipt of interest on depreciation fund investment A/c transfer to depreciation fund A/c)	696.0	696.0
31.12.01	Depreciation A/c Dr. To Depreciation Fund A/c (Being annual depreciation set-aside)	13920.7	13920.7

31.12.01	Depreciation Fund Investment A/c Dr. To Bank A/c (Being purchase of the investments against the depreciation fund)	14616.7	14616.7
31.12.02	Bank Account Dr. To depreciation fund A/c Being receipt of interest and its transfer to depreciation fund A/c)	1426.9	1426.9
31.12.02	Depreciation A/c Dr. To depreciation fund A/c (Being annual depreciation set aside	13920.7	13920.7
31.12.02	Depreciation Fund Investment A/c Dr. To Bank A/c (Being purchase of investments)	15347.6	15347.6
31.12.03	Bank A/c Dr. to depreciation fund A/c (Being receipt of interest on depreciation fund investment	2194.3	2194.3
31.12.03	Depreciation A/c Dr. To depreciation A/c (Being annual depreciation set aside)	13920.7	13920.7
31.12.00	Bank A/c Dr. To depreciation fund investment A/c (being sale of Dep fund investment A/c)	45200	45200
31.12.03	Depreciation Fund Investment A/c Dr. To depreciation fund A/c (Being profit on sale investment transferred)	1315.0	1315.0

31.12.03	Depreciation fund A/c Dr. to lease A/c (Being the transfer of depreciation fund A/c to lease A/c)	61315.0	61315.0
31.12.03	Lease A/c Dr. To PCL A/c (Being Balance of lease A/c transferred to place)	1315.0	1315.0
1.1.04	Lease A/c Dr. To Bank A/c	70000.0	70000.0

Depreciation Fund Account

Date	Particulars	Rs.	Date	Particulars	Rs.
31.12.00	By Balance c/d	13920.7	31.12.00	By Dep. a/c	13920.7
		13920.7			13920.7
31.12.01	To Balance c/d	28537.4	1.1.01	By Balance b/d	13920.7
			31.12.01	By Bank A/c Int.	696.0
			31.12.01	By Dep. a/c	13920.4
		28537.4			28537.4
31.12.02	By Balance c/d	43885.0	1.1.02	By Balance c/d	28537.4
			31.12.02	By Bank A/c Int.	1426.9
			31.12.02	By Dep. A/c	13920.7
		43885.0			43885.0
31.12.03	To lease A/c	61315.0	1.1.03	By Balance b/d	43885.0
			31.12.03	By Bank Interest	3194.3
			31.12.03	By Dep. a/c	61315.0
		61315.0			61315.0

Lease Account

Date	Particulars	Rs.	Date	Particulars	Rs.
1.1.00	To Bank A/c	60000	31.12.00	By Balance c/d	60000
		<u>60000</u>			<u>60000</u>
1.1.01	To Balance b/d	60000	31.12.01	By Balance c/d	60000
		<u>60000</u>			<u>60000</u>
1.1.02	To Balance b/d	60000	31.12.02	By Balance c/d	60000
		<u>60000</u>			<u>60000</u>
1.1.03	To Balance b/d	60000	31.12.03	By Balance c/d	60000
		<u>60000</u>			<u>60000</u>
31.12.03	To Balance b/d	<u>60000</u>			
31.12.03	To P & L A/c	1315			
	(Profit)	<u>61315</u>			<u>61315</u>

Depreciation Fund Investment A/c

Date	Particulars	Rs.	Date	Particulars	Rs.
31.12.00	To Bank A/c	13920.7	31.12.00	By Balance c/d	13920.7
		<u>13920.7</u>			<u>13920.7</u>
1.1.01	To Balance b/d	13920.7	31.12.01	By Balance c/d	28537.4
31.12.02	To Bank A/c	14616.7			
		<u>28537.4</u>			<u>28537.4</u>
1.1.02	To Balance b/d	28537.4	31.12.02	By Balance c/d	43885.0
31.12.02	To Bank A/c	15347.6			
		<u>43885.0</u>			<u>43885.0</u>
1.1.03	To Balance b/d	43885.0	31.12.03	By Bank a/c	45200.0
	To Dep. Fund a/c	1315.0			
		<u>45200.0</u>			<u>45200.0</u>

7. **Insurance Policy Method :** Under this method, instead of investing the money in securities an insurance policy for the required amount is taken. The amount

for a further period of 4 years for the same amount. Show the necessary ledger accounts.

Lease Account

Date	Particulars	Rs.	Date	Particulars	Rs.
1.1.03	To Bank A/c	50000	31.12.03	By Balance c/d	50000
1.1.04	To Balance b/d	50000	31.12.04	By Balance c/d	50000
1.1.05	To Bank A/c	50000	31.12.05	By Balance c/d	50000
1.1.06	To Bank A/c	50000	31.12.06	By Balance c/d	50000

Depreciation Insurance Policy A/c

Date	Particulars	Rs.	Date	Particulars	Rs.
1.1.03	To Balance A/c	11000	31.12.03	By Balance c/d	11000
1.1.04	To Balance b/d	11000	31.12.04	By Balance c/d	22000
	To Bank A/c	11000			
		<u>22000</u>			<u>22000</u>
1.1.05	To Balance b/d	22000	31.12.05	By Balance c/d	33000
	To Bank A/c	11000			
		<u>33000</u>			<u>33000</u>
1.1.06	To Balance b/d	33000	31.12.06	By Bank	50000
	To Bank	11000			
Dec.31	To profit	6000			
	Transferred to				
	Dep. Fund A/c				
		<u>50000</u>			<u>50000</u>

Depreciation Fund Account

Date	Particulars	Rs.	Date	Particulars	Rs.
1.1.03	To Balance c/d	11000	31.12.03	By P. & L c/c	11000
1.1.04	To Balance c/d	22000	31.12.04	By Balance b/d	11000
			Dec. 31	By P. & L a/c	11000
		<u>22000</u>			<u>22000</u>
1.1.05	To Balance c/d	33000	31.12.05	By Balance b/d	22000
				By P. & L. a/c	11000
		<u>33000</u>			<u>33000</u>
1.1.06	To Lease a/c	50000	31.12.06	By Balance b/d	33000
			Dec. 31	By P. & L. a/c	11000
			Dec. 31	By Dep. Insurance Policy a/c	6000
		<u>50000</u>			<u>50000</u>

8. Depletion Method : This is also known as productive output method. In this method it is essential to make an estimate of the units of output the asset will produce in its life time. This method is suitable in case of mines, queries, etc., where it is possible to make an estimate of the total output likely to be available. Depreciation is calculated per unit of output. Formula for calculating the depreciation rate is as under: $r = \frac{\text{Acquisition cost} - \text{Scrap value}}{\text{Units of output}}$

Example : If a mine is purchased for 50,000 and it is estimated that the total quantity of mineral in the mine is 1,00,000 tonnes, the rate of depreciation would be :

$$r = \frac{\text{Rs. } 50,000}{1,00,000} = \text{Rs. } 0.5$$

Hence, the rate of depreciation is 50 paise per tonne. In case output in a year is 20,000 tonnes, the amount of depreciation to be charged to the profit and loss account would be Rs. 10,000 (i.e., 20,000 tonnes X Rs. 0.50).

This method is useful where the output can be measured effectively, and the utility of the asset is directly related to its production use. Thus, the method provides the benefit of correlating the amount of depreciation with the productive use of asset.

7.6 METHODS OF RECORDING DEPRECIATION

In order to record depreciation, a provision for depreciation may or may not be maintained. In case a 'Provision for Depreciation Account' is maintained, the respective asset appears at its original cost since the depreciation is credited to 'Provision for Depreciation Account' instead of the 'Respective Asset Account'. In case a 'Provision for Depreciation Account' is not maintained, the respective asset appears at a written down value since the depreciation is credited to the 'Respective Asset Account'. The accounting entries under both these cases are summarised as under:

Case	When a Provision for Depreciation Account is maintained	When a Provision for Depreciation Account is not maintained
(a) For providing depreciation	Depreciation Dr. To Provision for Depreciation	Depreciation A/c Dr. To Asset A/c
(b) For closure of Depreciation A/c	Profit and Loss A/c Dr. To Depreciation A/c	Profit and Loss A/c Dr. To Depreciation A/c
(c) On disposal of an Asset	(i) For transfer of original cost of asset disposed off Asset Disposal A/c Dr. To Asset A/c	(i) For recording sale proceeds Cash A/c/Bank A/c Dr. To Asset A/c
	(ii) For transfer of accumulated depreciation on asset disposed off Provision for Depreciation A/c Dr. To Asset Disposal A/c	(ii) For transfer of Profit/loss on asset disposed off (a) In case of profit Asset A/c Dr. To Profit and Loss A/c
	(iii) For recording sale proceeds Cash A/c/Bank A/c Dr. To Asset Disposal A/c	(b) In case of loss, reverse of the above entry will be passed.
	(iv) For transfer of the balance in Asset Disposal Account (a) In case of profit Asset Disposal A/c Dr. To Profit & Loss A/c	
	(b) In case of loss, reverse of the above entry will be passed.	

Notes :

- (i) Book Value as on date of Sale = Original Cost–Total Depreciation till date of sale
- (ii) Profit=Sale Proceeds – Book Value as on date of sale
- (iii) Loss=Book value as on date of sale – Sale Proceeds
- (iv) In case of exchange of an asset, sale proceeds imply the ‘Trade in allowance’ (i.e. the amount at which the vendor agrees to acquire the old asset).
- (v) In case of destruction/damage of an insured asset by fire or accident, sale proceeds imply claim admitted by Insurance company together with salvage value (if any).

Illustration 6 : On 1st Jan. 2006, X Ltd. purchased a machinery for Rs. 12,00,000. On 1st July 1998, a part of the machinery purchased on 1st Jan. 2006 for Rs. 80,0000 was sold for Rs. 45,000 and a new machinery at a cost of Rs. 1,58,000 was purchased and installed on the same date. The company has adopted the method of providing 10% p.a. depreciation on the original cost of the machinery.

Required : Show the necessary ledger accounts assuming that (a) Provision for Depreciation Account is not maintained, (b) Provision for Depreciation Account is maintained.

Solution :**(a) When Provision for Depreciation Account is not maintained**

Dr.			Cr.		
Machinery Account					
Date	Particulars	Rs.	Date	Particulars	Rs.
01.01.06	To Bank A/c	12,00,000	31.12.06	By Depreciation A/c	1,20,000
				By Balance c/d	10,80,000
		<u>12,00,000</u>			<u>12,00,000</u>
01.01.97	To Balance b/d	10,80,000	31.12.97	By Depreciation A/c	1,20,000
				By Balance c/d	9,60,000
		<u>10,80,000</u>			<u>10,80,000</u>
01.01.98	To Balance b/d	9,60,000	01.07.98	By Bank A/c	45,000
01.07.98	To Bank A/c	1,58,000		By Profit & Loss A/c	15,000
			31.12.98	By Depreciation A/c	1,23,900
				By Balance c/d	9,34,100
		<u>11,18,000</u>			<u>11,18,000</u>

(b) When 'Provision for Depreciation Account is maintained

Dr. Machinery Account (at original cost)			Cr.		
Date	Particulars	Rs.	Date	Particulars	Rs.
01.01.06	To Bank A/c	<u>12,00,000</u>	31.12.06	By Balance c/d	<u>12,00,000</u>
01.01.97	To Balance b/d	<u>12,00,000</u>	31.12.97	By Balance c/d	<u>12,00,000</u>
01.01.98	To Balance b/d	<u>12,00,000</u>	01.07.98	By Asset Disposal A/c	80,000
01.07.98	To Bank A/c	<u>1,58,000</u>	31.12.98	By Balance c/d	<u>12,78,000</u>
		<u>13,58,000</u>			<u>13,58,000</u>

Dr. Provision or Depreciation Account			Cr.		
Date	Particulars	Rs.	Date	Particulars	Rs.
31.12.06	To Balance c/d	<u>1,20,000</u>	31.12.06	By Profit & Loss A/c	1,20,000
31.12.97	To Balance c/d	<u>2,40,000</u>	01.01.97	By Balance b/d	1,20,000
		<u>2,40,000</u>	31.12.97	By Profit & Loss A/c	<u>1,20,000</u>
01.07.98	To Asset Disposal A/c	20,000	01.01.98	By Balance b/d	<u>2,40,000</u>
31.12.98	To Balance c/d	<u>3,43,900</u>	31.12.98	By Profit & Loss A/c	<u>1,23,900</u>
		<u>3,63,900</u>			<u>3,63,900</u>

Dr. Asset Disposal Account			Cr.		
Date	Particulars	Rs.	Date	Particulars	Rs.
01.07.98	To Machinery A/c	80,000	01.07.98	By Provision for Depreciation A/c	20,000
				By Bank A/c	45,000
				By Profit & Loss A/c	15,000
				(Loss on sale)	
		<u>80,000</u>			<u>80,000</u>

Working Notes :

(i)	Calculation of Loss on Sale of Machinery	Rs.
A.	Original Cost as on 1.1.06	80,000
B.	Less : Depreciation @ 10% p.a. on Rs. 80,000	<u>8,000</u>
C.	Balance as on 1.1.97 (A-B)	<u>72,000</u>
D.	Less : Depreciation @ 10% p.a. on Rs. 80,000	<u>8,000</u>
E.	Balance as on 1.1.98 (C-D)	<u>64,000</u>

F.	Less : Depreciation @ 10% p.a. on Rs. 80,000 for 6 months	4,000
G.	Balance as on 1.7.98 (E–F)	<u>60,000</u>
H.	Less: Sale proceeds	45,000
I.	Loss on Sale (G–H)	<u>15,000</u>
(ii)	Calculation of Depreciation for 1998	
(a)	On Rs. 11,20,000 for 1 year	1,12,000
(b)	On Rs. 60,000 for 1/2 year	4,000
(c)	On Rs. 1,58,000 for 1/2 year	7,900
		<u>1,23,900</u>

Illustration 7 : Rahul Ltd. which depreciates the machines @ 25% p.a. on the reducing balance method, provides you the following particulars :

Cost on 31.12.95 Rs. 2,46,000. Provision for Depreciation (on 31.12.95) Rs. 1,24,000. No amounts being charged in the year of sale but full charge is being made for the years during which addition is made. On 1.7.97, one new machine was purchased for Rs. 24,000 and old machinery purchased on 1.7.1994 for Rs. 20,000 was discarded but could not be sold immediately. However, it was expected to realise Rs. 5,000 for same. Prepare (a) machinery Account, (b) Provision for Depreciation Account, and (c) Machinery Disposal Account for the years 1996 and 1997.

Solution

Dr.			Machinery Account			Cr.		
Date	Particulars	Rs.	Date	Particulars	Rs.			
01.01.96	To Balance b/d	2,46,000	31.12.96	By Balance c/d	2,46,000			
01.01.97	To Balance b/d	2,46,000	01.07.97	By Machinery				
01.07.97	To Bank A/c	24,000		Disposal A/c	20,000			
			31.12.97	By Balance c/d	2,50,000			
		<u>2,70,000</u>			<u>2,70,000</u>			

Dr.			Provision for Depreciation Account			Cr.		
Date	Particulars	Rs.	Date	Particulars	Rs.			
31.12.96	To Balance c/d	1,54,500	01.01.96	By Balance b/d	1,24,000			
			31.12.96	By Depreciation A/c				
				[25% of (Rs. 2,46,000)				
				- Rs. 1,24,000]	30,500			
		<u>1,54,500</u>			<u>1,54,500</u>			

(25)

01.07.97	To Machinery	11,563	01.01.97	By Balance b/d	1,54,500
	Disposal a/c		31.12.97	By Depreciation	
31.12.97	By Balance c/d	1,69,703		[25% of (Rs. 2,50,000-	
				Rs. 1,54,500+Rs.11,563]	26,766
		<u>1,81,266</u>			<u>1,81,266</u>

Dr.		Machinery Disposal Account		Cr.	
Date	Particulars	Rs.	Date	Particulars	Rs.
01.07.97	To Machinery	20,000	01.07.97	By Provision for	
				Depreciation A/c	11,563
				By P&L A/c (Loss)	
				(Purchase concept)	3,437
				By Balance c/d	5,000
		<u>20,000</u>			<u>20,000</u>

Working Note : Calculation of Depreciation provided on Machine discarded

	Book Value	Accumulated Depreciation
	Rs.	Rs.
A. Original Cost	20,000	–
B. <i>Less</i> : Depreciation for 1994	<u>5,000</u>	5,000
C. Book value on 1.1.1995	15,000	
D. <i>Less</i> : Depreciation for 1995	<u>3,750</u>	3,750
E. Book Value on 1.1.1996	11,250	
F. <i>Less</i> : Depreciation for 1996	<u>2,813</u>	2,813
	<u>8,437</u>	<u>11,563</u>

7.7 SALE OF AN ASSET

An enterprise may sell an asset either because of obsolescence or inadequacy or even for other reasons. In case an asset is sold during the course of the year, the amount realised should be credited to the Asset Account. The amount of depreciation for the period of which the asset has been used should be written off in the usual manner. Any balance in the Asset Account will represent profit or loss on disposal of the asset. This balance in the Asset Account should be transferred to the profit and loss account.

Illustration 8: A company purchased a machinery costing Rs. 60,000 on 1.4.2000. The accounting year of the company ends on 31st December every year. The company further purchased machinery on 1st October, 2000 costing Rs. 40,000. On 1st January, 2002, one-third of the machinery which was installed on 1.4.2000, became obsolete and was sold for Rs. 5000. Show how the machinery account would appear in the books of the company. The depreciation is to be charged at 10% p.a. on written down value method.

Machinery Account

Date	Particulars	Rs.	Date	Particulars	Rs.
1.4.00	To Bank	60000	31.12.00	By Depreciation	45000
Oct. 1	To Bank	40000		on Rs. 60000 for	
				9 month on Rs.	
				40000 for 3 month	1000
		100000	Dec.31	By Balance c/d	94500
1.1.01	To Balance b/d	94500	31.12.01	By Depreciation	9450
				on Rs. 94500 for	
				1 year	
			Dec. 31	By Balance c/d	85050
		94500			94500
1.1.02	To Balance b/d	85050	31.12.01	By Bank (sale pro)	5000
			Jan. 1	By Profit Loss	
				account loss on sale	
				(16650-5000)	11650
			Dec. 31	By Depreciation	6840
			Dec. 31	By Balance c/d	61560
		85050			85050

*Total written down value as on Jan. 1, 2002	85050
Less written down value of 1/3 of Machinery sold (2000-(1500+1850))	16650
	68400
Depreciation at 10% on Rs. 68400	6840

Depreciation on an asset purchased in the course of a year

Two alternatives are available regarding charging of depreciation on assets which have been bought during the course of an accounting year. These are as follows :

1. Depreciation may be charged only for the part of the year for which the asset could have been made available for use after purchase of it.
2. Depreciation may be charged for the full year irrespective of the date of purchase. It will be ascertained at the given rate of depreciation. The Income tax authorities also permit this.

Important Note : If there is no specific instruction in the question about depreciation, the students should give the assumption made by them in this regard. But, in case rate of depreciation has been given as a certain percentage per annum and the purchasing date has been given, it is suggested to calculate depreciation only for the part of the year for which the asset has been made available for its use.

7.8 CHANGE OF DEPRECIATION METHOD

To ensure comparability of results from year to year, it is essential that once a method of depreciation is selected by the management it should be followed consistently. However, sometimes a change in the method of depreciation may be required. The change may be required either because of statutory compulsion or required by an accounting standard or change would result in more appropriate presentational the financial statements.

The change in the method of depreciation may be desired from the current year onwards. In such a case, depreciation will be charged according to the new method from the current year.

Illustration : 9 Om Ltd. purchased a computer for Rs. 50,000 on 1.1.2003. It has five years life and a salvage value of Rs. 5,000. Depreciation was provided on straight line basis. With effect from 1.1.2005, the company decided to change the method of depreciation to Diminishing Balance method @20% p.a. Prepare computer account from 2003 to 2006. Assume, the company prepare final accounts on 31st December every year.

Computer Account

Date	Particulars	Rs.	Date	Particulars	Rs.
1.1.03	To Cash A/c	50000	31.12.03	By Depreciation	9000
			"	By Balance c/d	41000
		50000			50000
1.1.04	To Balance b/d	41000	31.12.04	By Depreciation	9000
			"	By Balance c/d	32000
		41000			41000
1.1.05	To Balance b/d	32000	31.12.05	By Depreciation	6400
			"	By Balance c/d	25600
		32000			32000
1.1.06	To Balance b/d	25600	31.12.06	By Depreciation	5120
			"	By Balance c/d	20480
		25600			25600

Working Notes :

- 1) Depreciation on straight line basis = Rs. $\frac{50000 - 5000}{5}$ = Rs. 9000
- 2) Depreciation on written down value basis during 2005
(Book value Rs. 32000) = $\frac{\text{Rs } 32000 \times 20}{100}$ = Rs. 6400

Change in the Method of Depreciation from a back date

Sometimes a change in the method of depreciation is effected retrospectively. In such a case, the following steps are required :

- (i) Find out the depreciation which has already been charged according to the old method or at the old rate.
- (ii) Compute the amount of depreciation that is to be charged according to the new method from the back date upto the end of the previous year.
- (iii) Find the difference, if any, under (i) and (ii) mentioned above.
- (iv) In the current year in addition to the depreciation for the current year charge also the difference found under step (iii).

Illustration 10: Taking the facts as in the illustration 7, prepare computer account for 2005 and 2006, if the firm decides on 1.1.2005 to charge depreciation according to Diminishing Balance method. Assume the change in the depreciation policy is effected by the firm since the date of purchase.

Solution :

Computer Account

Date	Particulars	Rs.	Date	Particulars	Rs.
1.1.05	To Balance	32000	31.12.05	By Depreciation	
				Difference for	Nil
				earlier year (1)	
				current year (2)	6400
			Dec. 31	By Balance c/d	25600
		32000			32000
1.1.06	To Balance	25600	31.12.06	By Depreciation	5150
			"	By Balance	20480
		25600			25600

Working Notes :

1)	1.1.2003	Acquisition cost of computer	50000
	31.12.03	Depreciation @ 20% p.a. on 50000	<u>10000</u>
	1.1.04	Balance	40000
	31.12.04	Depreciation @ 20% on Rs/ 4000	<u>8000</u>
		Depreciation according to Diminishing	
		Balance	18000
		method for the year 2003 and 2004 (10,000+8,000)	
		Less Depreciation according to straight line basis	18000
		(9000+9000)	Nil
		Difference	
2)	1.195	Balance	32000

31.12.05	Depreciation @ 20% p.a. on 32000	6400
1.1.06	Balance	<u>25600</u>
31.12.06	Depreciation @ 20% on 25600	5120
31.12.06	Balance	<u>20480</u>

7.9 SUMMARY

Depreciation is a gradual reduction in the economic value of an asset from any cause. The depreciation occurs because of constant use, passage of time, depletion, obsolescence, accidents and permanent fall in the market value. The need for providing depreciation arises to ascertain the profit or losses, to show the assets at its reasonable value, for replacement of assets, to reduce income tax, etc. The various methods of allocating depreciation include : fixed instalment methods, machine hour rate method, diminishing balance method, sum of years digits method, annuity method, depreciation fund method, insurance policy method and depletion method. The straight line method is very suitable particularly in case of those assets which get depreciated more on account of expire of period i.e. lease hold properties, patents etc. Diminishing balance method is suitable in those cases where the receipts are expected to decline as the asset gets older and, it is believed that the allocation of depreciation ought to be related to the pattern of assets expected receipts. In case an asset is sold during the course of the year, the amount realised should be credited to the Asset Account. The amount of depreciation for the period of which the asset has been used should be written off in the usual manner. Any balance in the Asset Account will represent profit or loss on disposal of the asset.

7.10 KEYWORDS

Depreciation: It is the gradual and permanent decrease in the value of an asset from any cause.

Depletion: Depletion refers to the reduction in the workable quantity of a wasting asset.

Obsolescence: It represents loss in the value of an asset on account of its becoming obsolete or out of date.

Fixed instalment method: Under this method, the assets are depreciated at a fixed amount throughout its life span.

Written down value method: Under this method, the depreciation is calculated every year on the diminishing value of the asset.

7.11 SELF ASSESSMENT QUESTIONS

1. Why is it necessary to calculate depreciation ? Discuss various factors which are considered for calculating depreciation
2. How do the matching principle and going concern concept apply to depreciation.
3. Distinguish between the following :
 - (a) Straight line method and diminishing balance method.
 - (b) Annuity method and depreciation Fund method.
 - (c) Depreciation and depletion
4. Explain the circumstances under which different methods of depreciation can be employed.
5. Discuss the advantages and disadvantage of Insurance Policy Method and Straight Line Methods.
6. What is 'sum of the year-digits method' to depreciation ? In what way does it differ from sinking fund method of depreciation
7. A firm purchases a plant for a sum of Rs. 10,000 on 1st January 2000. Installation charges are Rs. 2,000. Plant is estimated to have a scrap value of Rs. 1,000 at the end of its useful life of five years. You are required to prepare the plant account for five years charging depreciation according to Straight Line Method
8. A transport company purchases 5 trucks at Rs. 2,00,000 each on April 1, 2006. The company writes off depreciation @ 20% per annum on original cost and observes calendar year as its accounting year. On October 1, 1998 one of the trucks is involved in an accident and is completely destroyed. Insurance company pays Rs. 90,000 in full settlement of claim. On the same day, the company purchases a used truck for Rs. 1,00,000 and spends Rs. 20,000 on its overhauling. Prepare Truck Account for the three years ending on 31st December 2005.

[Loss on one truck Rs. 10,000, Book Value–Old trucks Rs. 3,60,000, New Truck Rs. 1,14,000].

9. A plant is purchased for Rs. 20,000. It is depreciated at 5% per annum on reducing balance for five years when it becomes obsolete due to new method of production and is scrapped. The scrap produces Rs. 5,385. Show the plant account in the ledger.

(An Loss on sale Rs. 10,091; Depreciation 1st year Rs. 1,000; 2nd years Rs. 950; 3rd year Rs. 902; 4th year RS. 857; 5th year Rs. 815.)

10. The machinery account of a factory showed a balance of Rs. 1,90,000 on 1st January 1998. 1st accounts were made up on 31st December each year and depreciation is written off at 10% p.a. under the Diminishing Balance Method.

On 1st June 1998, New Machinery is acquired at a cost of Rs. 28,000 and installation charges incurred in erecting the machines works out to Rs. 892 on the same date. On 1st June 1998 a machine which had cost Rs. 6,000 on 1st January 2003 was sold for Rs. 750, another machine which had cost Rs. 600 on 1st January 2004, was scrapped on the same date and it realised nothing.

Write up plant and Machinery Account for the year 1998, allowing the same rate of Depreciation as in the past calculating Depreciation to the nearest multiple of a Rupee. (Ans. Loss on Sale Rs. 2,645, Loss on scrapping Rs. 377, Closing Balance Rs. 1,94,665).

11. A company purchased a four years lease on January, 1, 1985 for Rs. 20,150. It is decided to provide for the replacement of the lease at the end of four years by setting up a Depreciation Fund. It is expected that investments will fetch interest at 4 per cent. Sinking Fund tables show that to provide the requisite sum at 4 percent at the end of four years, an investment of Rs. 4,745.02 is required. Investments are made to the nearest rupee.

On December 31, 1988, the investments are sold for Rs. 14,830 On 1st January, 1989, the same lease is renewed for a further period of 4 years by payment of Rs. 22,000.

Show journal entries and give the important ledger account to record the above. (Ans. Amount credited to the profit and loss account at the end of December, 1988 Rs. 17,56)

12. Chillies Ltd, acquired a long-term lease of property on payment of Rs. 60,000. A leasehold Redemption Policy was taken out on which an annual premium of Rs. 1,440 was payable. The surrender value of the policy on 31st March, 1997 was Rs. 12,896 to which amount the policy account stood adjusted. Next premium was paid on 20th December, 1997 and the surrender value on 31st March, 1978 was Rs. 14,444.

(i) Show the Redemption fund account and the policy account for the year ended 31st March, 1998

(ii) Assuming that of maturity, a sum of Rs. 60,100 was received and the balance in policy account then stood at Rs. 59,920 give the ledger accounts showing the entries necessary to close the accounts concerned. (Ans. (i) Balance at the end of 1998 Fund A/c & Policy A/c Rs. 14,444 (ii) Transfer to P & L a/c profit on maturity Rs. 100).

Subject :Accounting for Managers

Updated by: Dr. Mahesh Chand Garg

Course Code : CP-104

Lesson No. : 8

PREPARATION OF FINAL ACCOUNTS OF NON-CORPORATE ENTITIES

STRUCTURE

- 8.0 Objective
- 8.1 Introduction
- 8.2 Trading Account
- 8.3 Manufacturing Account
- 8.4 Profit and Loss Account
- 8.5 Balance Sheet
 - 8.5.1 Classification of Assets and Liabilities
 - 8.5.2 Grouping and Marshalling of Assets and Liabilities
- 8.6 Adjustment Entries
- 8.7 Summary
- 8.8 Keywords
- 8.9 Self Assessment Questions
- 8.10 Suggested Readings

8.0 OBJECTIVE

This lesson will make you familiar with preparation of

- * Trading Account.
- * Manufacturing Account.
- * Profit and Loss Account.
- * Balance Sheet.
- * Final accounts giving effect to adjustments.

8.1 INTRODUCTION

The transactions of a business enterprise for the accounting period are first recorded in the books of original entry, then posted therefrom into the ledger and lastly tested as to their arithmetical accuracy with the help of trial balance. After the preparation of the trial balance, every businessman is interested in knowing about two more facts. They are : (i) Whether he

has earned a profit or suffered a loss during the period covered by the trial balance, and (ii) Where does he stand now? In other words, what is his financial position?

For the above said purposes, the businessman prepares financial statements for his business i.e. he prepares the Trading and Profit and Loss Account and Balance Sheet at the end of the accounting period. These financial statements are popularly known as final accounts. The preparation of financial statements depends upon whether the business concern is a trading concern or manufacturing concern. If the business concern is a trading concern, it has to prepare the following accounts along with the Balance Sheet :

- (i) Trading Account; and
- (ii) Profit and Loss Account.

But, if the business concern is a manufacturing concern, it has to prepare the following accounts along with the Balance Sheet:

- (i) Manufacturing Account;
- (ii) Trading Account ; and
- (iii) Profit and Loss Account.

Basically, two types of statements are prepared namely "Income Statement" and "Position Statement". The Income Statement is generally known as Profit and Loss Account. This Profit and Loss Account is further sub-divided either into three parts or two parts according to the nature of the business. As stated above, if the concern is a manufacturing one, the Profit and Loss Account is divided into three sub-sections viz, Manufacturing Account, Trading Account and Profit and Loss Account. On the other hand, if it is a trading concern, then this account is divided into two sub-sections, namely Trading Account and Profit and Loss Account.

The second statement i.e. the "Position Statement" which is popularly known as the "Balance Sheet" is prepared by every type of business concern.

The Balance Sheet is a statement which shows the position of the assets, liabilities and capital in money terms, of an accounting entity as on a given date. A Balance Sheet is a formal representation of the accounting equation indicating that the assets are always equal, in value, to the liabilities plus capital.

Trading Account is prepared to know the Gross Profit or Gross Loss. Profit and Loss Account discloses net profit or net loss of the business. Balance sheet shows the financial position of the business on a given date. For preparing final accounts, certain accounts representing incomes or expenses are closed either by transferring to Trading Account or Profit and Loss Account. Any Account which cannot find a place in any of these two accounts goes to the Balance Sheet.

8.2 TRADING ACCOUNT

After the preparation of trial balance, the next step is to prepare Trading Account. Trading Account is one of the financial statements which shows the result of buying and selling of goods and/or services during an accounting period. The main objective of preparing the Trading Account is to ascertain gross profit or gross loss during the accounting period. Gross Profit is said to have been made when the sale proceeds exceed the cost of goods sold. Conversely, when sale proceeds are less than the cost of goods sold, gross loss is incurred. For the purpose of calculating cost of goods sold, we have to take into consideration opening stock, purchases, direct expenses on purchasing or manufacturing the goods and closing stock. The balance of this account i.e. gross profit or gross loss is transferred to the Profit and Loss Account.

Format of Trading Account

A Trading Account is prepared in "T" form just like every other account. Though it is an account, yet it is not exactly an ordinary ledger

account. It is one of the accounts which are prepared only once in an accounting period to ascertain the gross profit or gross loss of the business. As it is prepared once in a year, columns for date and journal folio are not provided. While preparing a Trading Account, an important point that must be kept in mind is that a closing journal entry is to be recorded in the journal proper. At the end of every accounting period, items of revenue and direct expenses are closed by transferring their respective balances to the Trading Account. The format of a Trading Account and the usually appearing entries therein are shown below :

TRADING ACCOUNT

For the year ended 31st March, 2006

Particulars	Amount Rs.	Particulars	Amount Rs.
To Opening Stock		By Sales	
To Purchases		<i>Less</i> Sales Returns	
<i>Less</i> Purchases Returns		By Closing Stock	
To Direct Expenses:		By Gross Loss	
Carriage Inward		transferred to	
Freight and Insurance		P & L A/c	
Wages			
Fuel, Power and Lighting expenses			
Manufacturing Expenses			
Coal, Water and Gas			
Motive Power			
Octroi			
Import Duty			
Custom Duty			
Consumable Stores			
Royalty on manufactured Goods			
Packing charges			
To Gross Profit transferred to P & L A/c			

Balancing of Trading Account

After recording the relevant items of various accounts in the respective sides of the Trading Account, the balance is calculated to ascertain Gross Profit or Gross Loss. If the total of the credit side is more than that of the debit side, the excess represents Gross Profit. Conversely, if the total the debit side is more than that of the credit side, the excess represents Gross Loss. Gross Profit is transferred to the credit side of the Profit and Loss Account and Gross loss to the debit side of the Profit and Loss Account.

Closing Entries for Trading Account

The journal entries necessary to transfer opening stock, purchases, sales and returns to the Trading Account are called closing entries, as they serve to close these accounts. These are as follows:

1. For transfer of opening stock, purchases and direct expenses to Trading A/c

Trading A/c	Dr.
To Stock (Opening) A/c	
To Purchases A/c	
To Direct Expenses A/c	

(Being opening stock, purchases and direct expenses transferred to Trading Account)

2. For transfer of sales and closing stock to Trading A/c

Sales A/c	Dr.
Stock (Closing) A/c	Dr.
To Trading A/c	

(Being sales, closing stock transferred to Trading Account)

3.(a) For Gross Profit

Trading A/c Dr.

To Profit & Loss A/c

(Being gross profit transferred to Profit and Loss Account)

(b) For Gross Loss

Profit & Loss A/c Dr.

To Trading A/c

(Being gross loss transferred to Profit and Loss Account)

Important Points Regarding Trading Account

1. Stock

The term 'stock' includes goods lying unsold on a particular date.

The stock may be of two types:

(a) Opening stock

(b) Closing stock

Opening stock refers to the closing stock of unsold goods at the end of previous accounting period which has been brought forward in the current accounting period. This is shown on the debit side of the Trading Account.

Closing stock refers to the stock of unsold goods at the end of the current accounting period. Closing stock is valued either at cost price or at market price whichever is less. Such valuation of stock is based on the principle of conservatism which lays down that the expected profit should not be taken into account but all possible losses should be duly provided for.

Closing stock is an item which is not generally available in the trial balance. If it is given in Trial Balance, it is not to be shown on the credit side of Trading Account but appears only in the Balance Sheet as an

asset. But if it is given outside the trial balance, it is to be shown on the credit side of the Trading Account as well as on the asset side of the Balance Sheet.

2. **Purchases**

Purchases refer to those goods which have been bought for resale. It includes both cash and credit purchases of goods. The following items are shown by way of deduction from the amount of purchases:

- (a) Purchases Returns or Return Outwards.
- (b) Goods withdrawn by proprietor for his personal use.
- (c) Goods received on consignment basis or on approval basis or on hire purchase.
- (d) Goods distributed by way of free samples.
- (e) Goods given as charity.

3. **Direct Expenses**

Direct expenses are those expenses which are directly attributable to the purchase of goods or to bring the goods in saleable condition. Some example of direct expenses are as under:

(a) **Carriage Inward**

Carriage paid for bringing the goods to the godown is treated as carriage inward and it is debited to Trading Account.

(b) **Freight and insurance**

Freight and insurance paid for acquiring goods or making them saleable is debited to Trading Account. If it is paid for the sale of goods, then it is to be charged (debited) to Profit and Loss Account.

(c) **Wages**

Wages incurred in a business are direct expenses, when they are incurred on manufacturing or merchandise or on making it saleable. Other

wages are indirect wages. Only direct wages are debited to the Trading Account. Other wages are debited to the Profit and Loss Account. If it is not mentioned whether wages are direct or indirect, it should be assumed as direct and should appear in the Trading Account.

(d) Fuel, Power and Lighting Expenses

Fuel and power expenses are incurred for running the machines. Being directly related to production, these are considered as direct expenses and debited to Trading Account. Lighting expenses of factory are also charged to Trading Account, but lighting expenses of administrative office or sales office are charged to Profit and Loss Account.

(e) Octroi

When goods are purchased within municipality limits, generally octroi duty has to be paid on it. It is debited to Trading Account.

(f) Packing Charges

There are certain types of goods which cannot be sold without a container or proper packing. These form a part of the finished product. One example is ink, which cannot be sold without a bottle. These type of packing charges are debited to Trading Account. But if the goods are packed for their safe despatch to customers, i.e. packing meant for transportation or fancy packing meant for advertisement, will appear in the Profit and Loss Account.

(g) Manufacturing Expenses

All expenses incurred in manufacturing the goods in the factory such as factory rent, factory insurance etc. are debited to Trading Account.

(h) Royalties

These are the payments made to a patentee, author or landlord for the right to use his patent, copyright or land. If royalty is paid on the

basis of production, it is debited to Trading Account and if it is paid on the basis of sales, it is debited to Profit and Loss Account.

4. Sales

Sales include both cash and credit sales of those goods which were purchased for resale purposes. Some customers might return the goods sold to them (called sales return) which are deducted from the sales in the inner column and net amount is shown in the outer column. While ascertaining the amount of sales, the following points need attention:

- (a) If a fixed asset such as furniture, machinery etc. is sold, it should not be included in sales.
- (b) Goods sold on consignment or on hire purchase or on sale or return basis should be recorded separately.
- (c) If goods have been sold but not yet despatched, these should not be shown under sales but are to be included in closing stock.
- (d) Sales of goods on behalf of others and forward sales should also be excluded from sales.

Illustration 1: From the following information, prepare the Trading Account for the year ending on 31 March 2002 :

Opening Stock Rs. 1,50,000, Cash Sales Rs. 60,000, Credit Sales Rs. 12,00,000, Returns Outwards Rs. 10,000, Wages Rs. 4,000, Carriage Inward Rs. 1,000, Freight Inward Rs. 3,000, Octroi Rs. 2,000, Cash Purchases Rs. 50,000, Credit Purchases Rs. 10,00,000, Returns Inward Rs. 20,000, Closing Stock as on 31.3.2002 Rs. 84,000.

Solution :

Trading Account

<i>Dr.</i>	for the year ending on 31March, 2002	<i>Cr.</i>	
Particulars	Rs.	Particulars	Rs.
To Opening Stock	1,50,000	By Sales	
To Purchases		Cash Sales	60,000
Cash Purchases	50,000	Credit Sales	12,00,000
Credit Purchases	10,00,000	Total Sales	12,60,000
Total Purchase	10,50,000	<i>Less</i> : Return	
<i>Less</i> : Return		Inward	20,000
Outwards	10,000	By Closing Stock	84,000
To Freight Inwards	3,000		
To Octroi	2,000		
To Carriage Inwards	1,000		
To Wages	4,000		
To Gross Profit tfd. to P&L A/c	1,24,000		
	13,24,000		13,24,000

8.3 MANUFACTURING ACCOUNT

Manufacturing Account is prepared by an enterprise engaged in manufacturing activities. It is prepared to ascertain the cost of goods manufactured during an accounting period. This account is closed by transferring its balance to the debit of the Trading Account. A general format of a Manufacturing Account is shown below :

Dr. Manufacturing Account of for the period ending on.....

Cr.

Particulars	Rs.	Particulars	Rs.
To Opening Work-in-progress		By Sale of Scrap	
To Raw material consumed		By Closing Work-in-progress	
Opening Stock		By Trading Account	
<i>Add : Purchases</i>		(Cost of goods produced transferred)	
<i>Add : Cartage Inwards</i>			
<i>Add : Freight Inwards</i>			
<i>Less : Return Outwards</i>			
<i>Less : Closing Stock</i>			
To Wages			
To Salary of Works Manager			
To Power, Electricity & Water			
To Fuel			
To Postage & Telephone			
To Depreciation on :			
Plant & Machinery			
Factory Land & Buildings			
To Repairs to :			
Plant & Machinery			
Factory Land & Building			
To Insurance			
Plant & Machinery			
Factory Land & Building			
To Rent and Taxes			
To General Expenses			
To Royalty based on production			

**DIFFERENCE BETWEEN TRADING ACCOUNT AND
MANUFACTURING ACCOUNT**

Trading Account	Manufacturing Account
1. Trading Account is prepared to find out the Gross Profit/Gross Loss.	Manufacturing account is prepared to find out the cost of goods produced.
2. The balance of the Trading account is transferred to the Profit and Loss Account.	The balance of the Manufacturing Account is transferred to the Trading Account.
3. Sale of scrap is not shown in the Trading Account.	Sale of scrap is shown in the Manufacturing Account.
4. Stocks of finished goods are shown in the Trading Account.	Stocks of raw materials and work-in-progress are shown in the Manufacturing Account.
5. Trading Account is a part of the Profit and Loss Account.	Manufacturing Account is a part of the Trading Account.

Illustration 2 : From the following information, prepare a Manufacturing Account for the year ending on 31 March 2002 :

	Rs.		Rs.
Work-in-progress (1.4.2001)	4,000	Wages	20,000
Raw Material (31.3.2002)	90,000	Salary of Works Manager	8,000
Carriage Inwards	3,000	Power, Electricity & Water	6,000
Freight Inwards	2,000	Fuel	4,000
Return Outwards	2,700	Depreciation :	
Sales of Scrap	1,000	Plant & Machinery	8,000
Work-in-progress (31.3.2002)	5,000	Factory Building	4,000
Raw Materials (1.4.2001)	74,000	Repairs & Insurance :	
Raw Material Purchased	45,000	Plant & Machinery	6,000
General Expenses	2,000	Factory Building	2,000
		Factory Rent & Taxes	10,000

Solution :

Manufacturing Account				
<i>Dr.</i>		for the year ending on 31 March 2002		<i>Cr.</i>
Particulars	Rs.	Particulars	Rs.	
To Opening WIP	4,000	By Sale of Scrap	1,000	
To Raw Materials consumed		By Closing WIP	5,000	
Opening Stock	74,000	By Trading A/c (Cost of goods		
<i>Add</i> : Purchases	45,000	manufactured transferred)	99,800	
<i>Add</i> : Carriage Inwards	3,000			
<i>Add</i> : Freight Inwards	2,000			
<i>Less</i> : Returns Outwards	2,200			
<i>Less</i> : Closing Stock	90,000			
	31,800			
To Wages	20,000			
To Salary of Works Managers	8,000			
To Power, Electricity & Water	6,000			
To Fuel	4,000			
To Depreciation				
Plant & Machinery	8,000			
Factory Building	4,000			
To Repairs & Insurance				
Plant & Machinery	6,000			
Factory Building	2,000			
To Factory Rent & Taxes	10,000			
To General Expenses	2,000			
	1,05,800			
			1,05,800	

8.4 PROFIT AND LOSS ACCOUNT

Trading Account results in the gross profit/loss made by a businessman on purchasing and selling of goods. It does not take into consideration the other operating expenses incurred by him during the course of running the business. Besides this, a businessman may have other sources of income. In order to ascertain the true profit or loss which the business has made during a particular period, it is necessary that all such expenses and incomes should be considered. Profit and Loss Account considers all

such expenses and incomes and gives the net profit made or net loss suffered by a business during a particular period. All the indirect revenue expenses and losses are shown on the debit side of the Profit and Loss Account, whereas all indirect revenue incomes are shown on the credit side of the Profit and Loss Account.

Profit and Loss Account measures net income by matching revenues and expenses according to the accounting principles. Net income is the difference between total revenues and total expenses. In this connection, we must remember that all the expenses, for the period are to be debited to this account - whether paid or not. If it is paid in advance or outstanding, proper adjustments are to be made (Discussed later). Likewise all revenues, whether received or not are to be credited. Revenue if received in advance or accrued but not received, proper adjustment is required.

A proforma of the Profit and Loss Account showing probable items therein is as follows :

PROFIT AND LOSS ACCOUNT

For the year ended

Particulars	Rs.	Particulars	Rs.
To Gross Loss b/d		By Gross Profit b/d	
<i>To Management Expenses:</i>		<i>By Other Income :</i>	
Rent, Rates and Taxes		Discount received	
Heating and Lighting		Commission received	
Office Salaries		<i>By Non-trading Interest :</i>	
Printing & Stationary		Bank Interest	
Postage & Telegrams		Rent of property let-out	
Telephone Charges		Dividend from shares	
Legal Charges		<i>By Abnormal Gains :</i>	
Audit Fees		Profit on sale of machinery	
Insurance		Profit on sale of investment	
General Expenses		By Net Loss transferred to	
<i>To Selling and Distribution</i>		Capital Account	
<i>Expenses :</i>			
Advertisement			
Tavellers' Salaries			
Expenses & Commission			
Godown Rent			
Export Expenses			
Carriage Outwards			
Bank Charges			
Agent's Commission			
Upkeep of Motor Lorries			
<i>To Depreciation and</i>			
<i>Maintenance :</i>			
Depreciation			
Repairs & Maintenance			
<i>To Financial Expenses :</i>			
Discount Allowed			
Interest on Loans			
Discount on Bills			
<i>To Abnormal Losses:</i>			
Loss by fire (not			
covered by Insurance)			
Loss on Sale of Fixed			
Assets			
Loss on Sale of Investments			
To Net profit transferred to			
Capital A/c			

Important Points in Profit and Loss Account

(i) **Salaries.** These include salaries paid to office, godowns and warehouse staff and should be shown in Profit and Loss Account being indirect expenses. Salaries to partners must be debited separately.

If salaries are paid after deduction of Income tax or Provident Fund then these should be added back to the salaries in order to have gross figure of salaries to be shown in Profit and Loss Account. If salaries are paid in kind by providing certain facilities to the employees such as house free of rent, meals or cloth or washing facility free of charge, then the value of such facilities should be regarded as salaries.

(ii) **Rent, Rates and Taxes.** These include offices and warehouse rent, municipal rates and taxes. Factory rent, rates and taxes should be debited to Trading Account and others to Profit and Loss Account. If any rent is received on subletting of the building, the same should be shown separately on the credit side of the Profit and Loss Account. If rent is paid after deduction of some taxes then these should be added back to know the correct amount of rent payable.

(iii) **Interest.** Interest paid on loans, overdrafts and bills overdue is an expense and is taken to the debit side of Profit and Loss Account. Interest received on loans advanced by the firm, on deposits and on securities is a gain and is shown on the credit side of Profit and Loss Account. Interest on capital should be shown separately on the debit side and interest on drawing on the credit side of Profit and Loss Account.

(iv) **Commission.** Commission received for doing the work of other firms may be credited to Profit and Loss Account as a gain and commission payable to the agents employed to sell the firm's goods is debited to Profit and Loss Account as an expense.

(v) **Repairs.** Repairs and small renewals or replacements relating to the plant and machinery, fixtures, fittings and utensils etc. are generally included under this

heading and such expenditure, being as expense, is debited to Profit and Loss Account.

(vi) *Depreciation*. It is an expense due to wear and tear, lapse of time and exhaustion of assets used in business. This is loss sustained by fixed assets and should be charged to Profit and Loss Account.

(vii) *Advertising*. All sums spent on advertising should be charged to Profit and Loss Account. If a large amount is paid under a contract covering two or three years, proportionate part should be charged to Profit and Loss Account and the balance appears as an asset in the Balance Sheet.

Expenses not to be shown in Profit and Loss Account

(i) *Domestic and Household Expenses*. These expenses are not shown in Profit and Loss Account, as these are personal expenses of the proprietor and should be treated as drawings.

(ii) *Income tax*. It should be treated as a personal expense of the proprietor and added to drawing. It should not be shown as an expense in Profit and Loss Account.

(iii) *Life Insurance Premium*. Premium paid on the life policy of the proprietor should be charged to the Drawings Account.

Closing Entries for Profit and Loss Account

(i) For transfer of various expenses to Profit & Loss A/c

Profit and Loss A/c	Dr.
To Various Expenses	A/c

(Being various indirect expenses transferred to Profit and Loss Account)

(ii) For transfer of various incomes and gains to Profit & Loss A/c

Various Incomes & Gains	A/c	Dr.
To Profit & Loss A/c		

(Being various incomes & gains transferred to Profit and Loss Account)

(iii)(a) For Net Profit

Profit & Loss A/c Dr.

 To Capital A/c

(Being Net Profit transferred to capital)

(b) For Net Loss

Capital A/c Dr.

 To Profit & Loss A/c

(Being Net Loss transferred to Capital Account)

DISTINCTION BETWEEN TRADING ACCOUNT AND PROFIT AND LOSS ACCOUNT

Trading Account	Profit and Loss Account
1. Trading Account is prepared as a part or section of the Profit and Loss Account.	Profit and Loss Account is prepared as a main account.
2. Direct Expenses are taken in Trading Account.	Indirect expenses are taken in Profit and Loss Account.
3. Gross Profit or Gross Loss is ascertained from Trading Account.	Net Profit or Net Loss is ascertained from the Profit and Loss Account.
4. The Balance of the Trading Account i.e. Gross Profit or Gross Loss is transferred to the Profit and Loss Account.	The balance of the Profit and Loss Account i.e. Net Profit or Net Loss is transferred to proprietor's Capital Account.
5. Items of account written in the Trading Account are few as compared the Profit and Loss Account.	Items of accounts written in the Profit and Loss Account are much more as compared to the Trading Account.

8.5 BALANCE SHEET

A Balance Sheet is a statement of financial position of a business concern at a given date. It is called a Balance Sheet because it is a sheet of balances of those ledger accounts which have not been closed till the preparation of Trading and Profit and Loss Account. After the preparation

of Trading and Profit and Loss Account the balances left in the trial balance represent either personal or real accounts. In other words, they either represent assets or liabilities existing on a particular date. Excess of assets over liabilities represent the capital and is indicative of the financial soundness of a company.

A Balance Sheet is also described as a "Statement showing the Sources and Applications of Capital". It is a statement and not an account and prepared from real and personal accounts. The left hand side of the Balance Sheet may be viewed as description of the sources from which the business has obtained the capital with which it currently operates and the right hand side as a description of the form in which that capital is invested on a specified date.

Characteristics

The characteristics of a Balance Sheet are summarised as under:

- (a) A Balance Sheet is only a statement and not an account. It has no debit side or credit side. The headings of the two sides are 'Assets' and 'Liabilities'.
- (b) A Balance Sheet is prepared at a particular point of time and not for a particular period. The information contained in the Balance Sheet is true only at that particular point of time at which it is prepared.
- (c) A Balance Sheet is a summary of balances of those ledger accounts which have not been closed by transfer to Trading and Profit and Loss Account.
- (d) A Balance Sheet shows the nature and value of assets and the nature and the amount of liabilities at a given date.

8.5.1 Classification of Assets and Liabilities

Assets

Assets are the properties possessed by a business and the amount due to it from others. The various types of assets are :

(a) Fixed Assets

All assets which are acquired for the purpose of using them in the conduct of business operations and not for reselling to earn profit are called fixed assets. These assets are not readily convertible into cash in the normal course of business operations. Examples are land and building, furniture, machinery, etc.

(b) Current Assets

All assets which are acquired for reselling during the course of business are to be treated as current assets. Examples are cash and bank balances, inventory, accounts receivables, etc.

(c) Tangible Assets

These are definite assets which can be seen, touched and have volume such as machinery, cash, stock, etc.

(d) Intangible Assets

Those assets which cannot be seen, touched and have no volume but have value are called intangible assets. Goodwill, patents and trade marks are examples of such assets.

(e) Fictitious Assets

Fictitious assets are not assets at all since they are not represented by any tangible possession. They appear on the asset side simply because of a debit balance in a particular account not yet written off e.g. provision for discount on creditors, discount on issue of shares etc.

(f) Wasting Assets

Such assets as mines, quarries etc. that become exhausted or reduce in value by their working are called wasting assets.

Liabilities

A liability is an amount which a business is legally bound to pay. It is a claim by an outsider on the assets of a business. The liabilities of a business concern may be classified as :

(a) Fixed Liabilities

These are those liabilities which are payable only on the termination of the business such as capital contributed by the owner.

(b) Long Term Liabilities

The liabilities or obligations of a business which are not payable within the next accounting period but will be payable within next five to ten years are known as long term liabilities. Public deposits, debentures, bank loan are the examples of long term liabilities.

(c) Current Liabilities

All short term obligations generally due and payable within one year are current liabilities. This includes trade creditors, bills payable etc.

(d) Contingent Liabilities

A contingent liability is one which is not an actual liability but which may become an actual one on the happening of some event which is uncertain. Thus such liabilities have two characteristics : (a) uncertainty as to whether the amount will be payable at all, and (b) uncertainty about the amount involved. Examples of such liabilities are :

- (a) Claims against the companies not acknowledged as debts.
- (b) Uncalled liability on partly paid up shares.
- (c) Arrears of fixed cumulative dividend.
- (d) Estimated amount of contracts remaining to be executed on capital account and not provided for.

- (e) Liability of a case pending in the court.
- (f) Bills of exchange, guarantees given against a particular firm or person.

8.5.2 Grouping and Marshalling of Assets and Liabilities

The arrangement of assets and liabilities in certain groups and in a particular order is called Grouping and Marshalling of the Balance Sheet of a business. Assets and liabilities can be arranged in the Balance Sheet into two ways :

- (i) In order of liquidity.
- (ii) In order of permanence.
- (i) *In order of liquidity.* When assets and liabilities are arranged according to their reliability and payment preferences, such an order is called liquidity order. Such arrangement is given in the Balance Sheet (I).

Balance Sheet (I)

Liabilities	Rs.	Assets	Rs.
<i>Current Liabilities :</i> Bills Payable Sundry Creditors Bank Overdraft <i>Long Term Liabilities :</i> Loan from Bank Debentures <i>Fixed Liabilities :</i> Capital		<i>Liquid Assets :</i> Cash in Hand Cash at Bank <i>Floating Assets :</i> Sundry Debtors Investments Bill Receivable Stock in Trade Prepaid Expenses <i>Fixed Assets :</i> Machinery Building Furniture & Fixtures Motor Car <i>Fictitious Assets :</i> Advertisement Misc. Expenses Profit & Loss A/c <i>Intangible Assets</i> Goodwill Patents Copyright	

(ii) *In order of permanence.* When the order is reversed from that what is followed in case of liquidity, it is called order of permanence. This order is followed in case of joint stock companies compulsorily but can be followed in other forms of business organisations also. Fixed assets and liabilities are shown first on the assumption that these will be sold or paid only on the insolvency of a business. This order of Balance Sheet is given below in Balance Sheet (II).

Balance Sheet (II)

<i>Liabilities</i>	Rs.	<i>Assets</i>	Rs.
Fixed Liabilities		Intangible Assets	
Long Term Liabilities		Fictitious Assets	
Current Liabilities		Fixed Assets	
		Floating Assets	
		Liquid Assets	

Illustration 3: The following balances are extracted from the books of Nikhil & Co. on 31st March, 2002. You are required to make the necessary closing entries and to prepare the Trading and Profit and Loss Account and a Balance Sheet as on that date :

	Rs.		Rs.
Opening Stock	500	Commission (Cr.)	200
B/R	2,250	Returns Outwards	250
Purchases	19,500	Trade Expenses	100
Wages	1,400	Office Fixtures	500
Insurance	550	Cash in Hand	250
Sundry Debtors	15,000	Cash at Bank	2,375
Carriage Inwards	400	Rent & Taxes	550
Commission (Dr.)	400	Carriage Outwards	725
Interest on Capital	350	Sales	25,000
Stationary	225	Bills Payable	1,500
Returns Inwards	650	Creditors	9,825
		Capital	8,950

The Closing Stock was valued at Rs. 12,500.

Solution :**Closing Entries**

Date	Particulars	Dr.	Cr.
2002		Amount	Amount
March 31	Trading Account Dr.	Rs. 22,450	Rs.
	To Stock A/c		500
	To Purchases A/c		19,500
	To Wages A/c		1,400
	To Returns Inwards A/c		650
	To Carriage Inwards A/c		400
	(Being balance transferred)		
"	Sales A/c Dr.	25,000	
	Returns Outwards A/c Dr.	250	
	To Trading Account		25,250
	(Being balances transferred)		
	Closing Stock A/c Dr.	12,500	
	To Trading A/c		12,500
	(Being value of closing stock)		
"	Trading Account Dr.	15,300	
	To Profit and Loss A/c		15,300
	(Being gross profit transferred)		
"	Profit and Loss Account Dr.	2,900	
	To Insurance A/c		550
	To Commission A/c		400
	To Interest on Capital A/c		350
	To Stationary A/c		225
	To Trade Expenses A/c		100
	To Rent and Taxes A/c		550
	To Carriage Outwards A/c		725
	(Being balances transferred)		
"	Commission A/c Dr.	200	
	To Profit & Loss A/c		200
	(Being balance transferred)		
"	Profit and Loss A/c Dr.	12,600	
	To Capital A/c		12,600
	(Being net profit transferred)		

Trading & Profit and Loss A/c of Messers Nikhil & Co.

for the year ended 31st March, 2002

Particulars	Rs.	Particulars	Rs.
To Opening Stock	500	By Sales	25,000
To Purchases	19,500	<i>Less</i> : Returns Inwards	650
<i>Less</i> : Returns Outwards	250	By Closing Stock	12,500
To Wages	1,400		
To Carriage Inwards	400		
To Gross Profit c/d	15,300		
	<u>36,850</u>		<u>36,850</u>
To Insurance	550	By Gross Profit b/d	15,300
To Commission	400	By Commission	200
To Interest on Capital	350		
To Stationary	225		
To Trade Expenses	100		
To Rent and Taxes	550		
To Carriage Outwards	725		
To Net Profit transferred to Capital A/c	12,600		
	<u>15,500</u>		<u>15,500</u>

Balance Sheet of Messers Nikhil & Co.

as on 31st March, 2002

Liabilities	Rs.	Assets	Rs.
Creditors	9,825	Cash in Hand	250
Bills Payable	1,500	Cash at Bank	2,375
Capital		Bill Receivable	2,250
March 31, 2002	8,950	Stock	12,500
<i>Add</i> : Net Profit	12,600	Sundry Debtors	15,000
	<u>21,550</u>	Office Fixtures	500
	<u>32,875</u>		<u>32,875</u>

8.6 ADJUSTMENT ENTRIES

While preparing Trading and Profit and Loss Account one point that must be kept in mind is that expenses and incomes for the full trading period are to be taken into consideration. For example if an expense has been incurred but not paid during that period, liability for the unpaid amount should be created before the accounts can be said to show the profit or loss. All expenses and incomes should properly be adjusted through entries. These entries which are passed at the end of the accounting period are called adjusting entries. Some important adjustments which are to be made at the end of the accounting year are discussed in the following pages.

1. Closing Stock

This is the stock which remained unsold at the end of the accounting period. Unless it is considered while preparing the Trading Account, the gross profit shall not be correct. Adjusting entry for closing stock is as under :

Closing Stock Account	Dr.
To Trading Account	
(Being closing stock brought in to books)	

Treatment in final accounts

- (i) Closing stock is shown on the credit side of Trading Account.
- (ii) At same value it will be shown as an asset in the Balance Sheet.

2. Outstanding Expenses

Expenses which have become due and have not been paid by the end of financial year, are called outstanding expenses.

For example, when Profit and Loss Account is being prepared on 31st March 31, 2002, it may be found that salaries for the month of March have become due on March 31, 2002 but have not been paid till that date. This must

be shown on the debit side of Profit and Loss Account being prepared on March 31, 2002. The entry will be as under :

Salary account	Dr.	
		To Outstanding salary account
(Being salary due but not paid)		

Treatment in final accounts :

- (i) The amount of outstanding salary shall be added to particular expenses on the debit side of Profit and Loss Account.
- (ii) In balance sheet the same amount will be shown as a liability.

3. Unexpired or Prepaid Expenses

Those expenses which have been paid in advance, i.e., whose benefit will be available in future are called unexpired or prepaid expenses. For example, if a fire insurance policy is taken for a year paying Rs. 1,000 as insurance premium on 1st July, 2000 and will expire on 30th June, 2001, the position on 31st March 2001, when accounts are closed, will be that Rs. 750, i.e., premium from 1st July, 2000 to 31st March, 2001 will be an expense but Rs. 250 i.e., premium from 1st April, 2001 to 30th June, 2001 will be unexpired expense. In order to bring this into account on 31st March, 2001, the following entry will be passed :

Prepaid Insurance Premium A/c	Dr.	Rs. 250
		To Insurance Premium A/c
		Rs. 250

The two-fold effect of prepaid expenses will be :

- (i) Prepaid expenses will be shown in the Profit and Loss Account by way of deduction from the expenses and

- (ii) These will be shown on the assets side of the Balance Sheet as prepaid expenses. In the beginning of the next year, a reverse entry will be passed to nullify the effect of adjusting entry.

4. Accrued Income

That income which has been earned but not received during the accounting year is called accrued income. For example, if the business has invested Rs. 10,000 in 5% gilt edged securities on 1st April, 2001 but during the year Rs. 350 has been received as interest on securities. Then Rs. 150 interest on securities earned and due for payment on 31st March, 2002 but not received, will be accrued interest for the year 2001-2002. In order to bring accrued interest into books of account, the following adjusting entry will be passed :

Accrued Interest A/c	Dr.	Rs. 150	
To Interest A/c			Rs. 150

The two-fold effect of accrued income will be :

- (i) It will be shown on the credit side of Profit and Loss Account by way of addition to the income, and
- (ii) It will be shown on the assets side of the Balance Sheet as Accrued Income.

Next year, in the beginning, a reverse entry will be passed in order to eliminate the effect of adjusting entry and to bring the same to the correct position.

5. Income Received in Advance

Income received but not earned during the accounting year is called as income received in advance. For example, if building has been given to a tenant on Rs. 2,400 per annum but during the year Rs. 3,000 has been received, then Rs. 600 will be income received in advance. In order to bring this into books of

account, the following adjusting entry will be made at the end of the accounting year :

Rent A/c	Dr.	Rs. 600	
	To Rent Received in Advance Account		Rs. 600

The two-fold effect of this adjustment will be :

- (i) It is shown on the credit side of Profit and Loss Account by way of deduction from the income, and
- (ii) It is shown on the liabilities side of the Balance sheet as income received in advance.

A reverse entry will be passed at the beginning of the next year to nullify the effect of adjusting entry.

6. Depreciation

Depreciation is the reduction in the value of fixed asset due to its use, wear and tear or obsolescence. When an asset is used for earning purposes, it is necessary that reduction due to its use, must be charged to the Profit and Loss Account of that year in order to show correct profit or loss and to show the asset at its correct value in the Balance Sheet. There are various methods of charging depreciation on fixed assets. Suppose machinery for Rs.10,000 is purchased on 1.1.2001, 20% p.a. is the rate of depreciation. Then Rs.2,000 will be depreciation for the year 2001 and will be brought into account by passing the following adjusting entry :

Depreciation A/c	Dr.	Rs.2,000	
	To Machinery A/c		Rs.2,000

The two-fold effect of depreciation will be :

- (i) Depreciation is shown on the debit side of Profit and Loss Account, and

- (ii) It is shown on the asset side of the Balance Sheet by way of deduction from the value of concerned asset.

7. **Interest on Capital**

The amount of capital invested by the trader in his business is just like a loan by the firm. Charging interest on capital is based on the argument that if the same amount of capital were invested in some securities elsewhere, the businessman would have received interest thereon. Such interest on capital is not actually paid to the businessman. Interest on capital is a gain to the businessman because it increases its capital, but it is a loss to the business concern.

Interest is calculated on the opening balance of the capital at the given rate for the full accounting period. If some additional amount of capital has been brought in the business during the course of accounting period, interest on such additional amount of capital is calculated from the date of introduction to the end of the accounting period. The following adjustment entry is passed for allowing interest on capital :

Interest on Capital Account	Dr.
To Capital Account	

Treatment in final accounts

- (i) Interest allowed on capital is an expense for the business and is debited to Profit and Loss Account, i.e. it is shown on the debit side of the Profit and Loss Account.
- (ii) Such interest is not actually paid in cash to the businessman but added to his capital account. Hence, it is shown as an addition to capital on the liabilities side of the Balance Sheet.

8. **Interest of Drawings**

If interest on capital is allowed, it is but natural that interest on drawings should be charged from the proprietor, as drawings reduce

capital. Suppose during an accounting year, drawings are Rs.10,000 and interest on drawings is Rs.500. In order to bring this into account, the following entry will be passed :

Drawings A/c	Dr.	Rs.500	
			Rs.500
	To Interest on Drawings A/c		

The two-fold effect of interest on drawings will be :

- (i) Interest on drawings will be shown on the credit side of Profit and Loss Account, and
- (ii) Shown on the liabilities side of the Balance Sheet by way of addition to the drawings which are ultimately deducted from the capital.

9. **Bad Debts**

Debts which cannot be recovered or become irrecoverable are called bad debts. It is a loss for the business. Such a loss is recorded in the books by making following adjustment entry :

Bad Debts A/c	Dr.		
			To Sundry Debtors A/c

The two-fold effect of bad debts will be that bad debts will be :

- (i) Shown on the debit side of Profit and Loss Account, and
- (ii) Shown on the assets side of the Balance Sheet by way of deduction from sundry debtors.

10. **Provisions for Doubtful Debts**

In addition to the actual bad debts, a business unit may find on the last day of the accounting period that certain debts are doubtful, i.e., the amount to be received from debtors may or may not be received. The amount of doubtful debts is calculated either by carefully examining the position of each debtor individually and summing up the amount of doubtful

debts from various debtors or it may be computed (as is usually done) on the basis of some percentage (say 5%) of debtors at the end of the accounting period. The percentage to be adopted is usually based upon the past experience of the business. The reasons for making provision for doubtful debts are two as discussed below :

- (a) Loss caused by likely bad debts must be charged to the Profit and Loss Account of the period for which credit sales have been made to ascertain correct profit of the period.
- (b) For showing the true position of realisable amount of debtors in the Balance Sheet, i.e., provision for doubtful debts will be deducted from the amount of debtors to be shown in the Balance Sheet.

For example, sundry debtors on 31.03.2002 are Rs.55,200. Further bad debts are Rs.200. Provision for doubtful debts @ 5% is to be made on debtors. In order to bring the provision for doubtful debts of Rs.2,750, i.e., 5% on Rs.55,000 (55,200-200), the following entry will be made :

Profit and Loss A/c	Dr.	Rs.2,750	
To Provision for Doubtful Debts A/c			Rs.2,750

It may be carefully noted that further bad debts (if any) will be first deducted from debtors and then a fixed percentage will be applied on the remaining debtors left after deducting further debts. It is so because percentage is for likely bad debts and not for bad debts which have been decided to be written off.

Treatment in final accounts

- (i) The amount of provision for doubtful debts is a provision against a possible loss so it should be debited to Profit and Loss Account.

- (ii) The amount of provision for doubtful debts is deducted from sundry debtors on the assets side of the Balance Sheet.

11. **Provision for Discount on Debtors**

It is a normal practice in business to allow discount to customers for prompt payment and it constitutes a substantial sum. Sometimes the goods are sold on credit to customers in one accounting period whereas the payment of the same is received in the next accounting period and discount is to be allowed. It is a prudent policy to charge this expenditure (discount allowed) to the period in which sales have been made, so a provision is created in the same manner, as in case of provision for doubtful debts i.e.

Profit and Loss Account

Dr.

To Provision for Discount on Debtors Account

Treatment in final accounts

- (i) Provision for discount on debtors is a probable loss, so it should be shown on the debit side of Profit and Loss Account.
- (ii) Amount of provision for discount on debtors is deducted from sundry debtors on the assets side of the Balance Sheet.

Note : Such provision is made on debtors after deduction of further bad debts and provision for doubtful debts because discount is allowable to debtors who intend to make the payment.

12. **Reserve for Discount on Creditors**

Prompt payments to creditors enables a businessman to earn discount from them. When a businessman receives cash discount regularly, he can make a provision for such discount since he is likely to receive the discount from his creditors in the following years also. The discount received being a profit, the provision for discount on creditors amounts to an addition to the profit.

Accounting treatment of Reserve for Discount on Creditors is just reverse of that in the case of Provision for Discount on Debtors. The adjustment entries for Reserve for Discount on Creditors is as follows :

Reserve for Discount on Creditors Account	Dr.	
To Profit and Loss Account		

Treatment in final accounts

- i) Reserve for discount on creditors is shown on the credit side of Profit and Loss Account.
- ii) In the liabilities side of the Balance Sheet, the reserve for discount on creditors is shown by way of deductions from Sundry Creditors.

13. Deferred Revenue Expenditure

The expenditure done in the initial stage but the benefit of which will also be available in subsequent years is called deferred revenue expenditure. Part of such expenditure will be written off in each year and the rest will be capitalised. The entry for this expenditure (say advertisement Rs. 2,000 which will be spread over 5 years) will be :

Profit and Loss A/c	Dr.	Rs. 400
To Advertisement A/c		Rs. 400

The two-fold effect of such expenditure will be :

- (i) It is shown on the debit side of Profit and Loss Account, and
- (ii) It is shown on the assets side by way of deduction from capitalised expense.

14. Loss of Stock by Fire

In business, the loss of stock may occur due to fire. The position of the business may be :

- (a) All the stock is fully insured.
- (b) The stock is partly insured.
- (c) The stock is not insured at all.

If the stock is fully insured, the whole loss (say Rs. 15,000) will be claimed from the insurance company. The following entry will be passed :

Insurance Co. A/c	Dr.	Rs. 15,000	
To Trading A/c			Rs. 15,000

The double effect on this entry will be :

- (i) It will be shown on the credit side of the Trading Account, and
- (ii) It is shown on the assets side of the Balance Sheet.

If the stock is not fully insured, the loss of stock covered by insurance policy (say Rs. 10,000) will be claimed from the insurance company and the rest of the amount (say Rs. 5,000) will be loss for the business. The following entry will be passed:

Insurance Co. A/c	Dr.	Rs. 10,000	
Profit & Loss A/c	Dr.	Rs. 5,000	
To Trading A/c			Rs. 15,000

The two-fold effect of this entry will be :

- (i) It will be shown on the credit side of the Trading Account with the value of stock and shown on the debit side of the Profit and Loss Account for that part of the stock which is not insured, and
- (ii) It is shown on the assets side of the Balance Sheet with the amount which is to be realised from the Insurance Co., i.e., that part of the loss which is insured.

If the stock is not insured at all, whole of the loss (say Rs. 15,000) will be borne by the firm. The entry for this will be :

Profit and Loss A/c	Dr.	Rs. 15,000	
			To Trading A/c
			Rs. 15,000

The double effect of this entry will be :

- (i) It is shown on the credit side of the Trading Account, and
- (ii) It is shown on the debit side of the Profit and Loss Account.

16. Goods Distributed as Free Samples

Sometimes in order to promote the sale of goods, some of the produced goods are distributed as free samples. For example, if goods worth Rs. 2,000 are distributed as free samples then it will be an advertisement for the concern and on other hand stock will be less by such goods. In order to bring this into books of account, the following entry is passed :

Advertisement A/c	Dr.	Rs. 2,000	
			To Trading or Purchases A/c
			Rs. 2,000

The two-fold effect of this entry will be :

- (i) It is shown on the credit side of the Trading Account, or deducted from the purchases, and
- (ii) It is also shown on the credit side of the Profit and Loss Account as advertisement expenses.

Illustration 4 : From the following Trial Balance of Mr. Nitin, prepare Trading and Profit and Loss Account for the year ending 31st March, 2002 and Balance Sheet on that date :

Debit Balance	Rs.	Credit Balance	Rs.
Drawings	14,200	Capital	85,000
Plant and Machinery	19,000	Sales	2,38,120
Stock on Ist April, 2001	29,200	Discount Received	1,200
Purchases	2,07,240	Provision for Doubtful Debts	2,100
Bills Receivable	4,800	Returns outward	5,820
Returns Inwards	4,200	Apprenticeship premiums	2,400
Cash in hand	960	Bank Overdraft	4,000
Sundry Debtors	64,000	Sundry Creditors	20,000
Bad debts	3,440	Bills Payable	3,600
Sundry Expenses	8,800		
Rent	2,400		
Rates and Taxes	4,000		
	<u>3,62,240</u>		<u>3,62,240</u>

Adjustments :

- (i) Interest is charged on capital @ 5% per annum.
- (ii) Provide for Doubtful Debts at 5% on sundry debtors.
- (iii) Depreciation is charged on Plant and Machinery @ 10% p.a.
- (iv) Outstanding Rent was Rs. 800
- (v) There were prepaid taxes for Rs. 1,600.
- (vi) Apprenticeship Premium Rs. 400 was to be carried forward.
- (vii) The value of stock on 31st March 2001 was Rs. 34,000.

Solution :**Trading and Profit and Loss Account**

Dr.		for the year ending 31st March, 2002		Cr.	
Particulars		Rs.	Particulars		Rs.
To Opening Stock		29,200	By Sales	2,38,120	
To Purchases	2,07,240		<i>Less</i> Returns Inwards	4,200	2,33,920
<i>Less</i> Returns Outwards	5,820	2,01,420	By Closing Stock		34,000
To Gross Profit c/d		37,300			
		<u>2,67,920</u>			<u>2,67,920</u>
To Sundry Expenses		8,800	By Gross Profit b/d		37,300
To Rent	2,400		By Apprenticeship Premium	2,400	
Add O/S rent	800	3,200	<i>Less</i> Carried forward	400	2,000
To Rates and Taxes	4,000		By Discount Received		1,200
<i>Less</i> P/P rates and insurance	1,600	2,400			
To Depreciation on Plant & Machinery		1,900			
To Provision for Bad debts :					
Bad debts	3,440				
Add New Provision required	3,200				
		6,640			
<i>Less</i> Old Provision	2,100	4,540			
To Interest on Capital		4,250			
To Net Profit (Transferred to capital account)		15,410			
		<u>40,500</u>			<u>40,500</u>

Balance Sheet
as on 31st March, 2002

Liabilities		Rs.	Assets		Rs.
Capital	85,000		Plant and Machinery	19,000	
Add Interest on Capital	4,250		<i>Less</i> Depreciation @ 10%	1,900	17,100
Add Net Profit	15,410		Closing Stock		34,000
	<u>1,04,660</u>		Sundry Debtors	64,000	
<i>Less</i> drawings	14,200	90,460	<i>Less</i> New Provision for		
Bank overdraft		4,000	Doubtful debt @ 5%	3,200	60,800
Sundry Creditors		20,000	Bills Receivable		4,800
Bills Payable		3,600	Cash in hand		960
Outstanding Rent		800	Prepaid rates and insurance		1,600
Apprenticeship Premium received in advance		400			
		<u>1,19,260</u>			<u>1,19,260</u>

8.7 SUMMARY

Financial statements are the means of conveying to management, owners and interested outsiders a concise picture of profitability and financial position of the business. The preparation of the final accounts is not the first step in the accounting process but they are the end products of the accounting process which give a concise accounting information of the accounting period after the accounting period is over. In order to know the profit or loss earned by a firm, Trading and Profit and Loss Account is prepared. Balance Sheet will portray the financial condition of the firm on a particular date.

8.8 KEYWORDS

Trading account: It is an account which is prepared to ascertain the gross profit or loss of the business.

Manufacturing account: It is prepared in order to know the cost of production of goods or services manufactured.

Profit and Loss account: The object of profit and Loss Account is to reveal the net profit or loss of the business.

Balance sheet: A balance sheet is a statement which portrays the financial position of the business.

Grouping and marshalling of assets and liabilities: The arrangement of assets and liabilities in certain groups and in a particular order is called grouping and marshalling of the balance sheet of a business.

Prepaid expenses: Those expenses which have been paid in advance i.e. whose benefit will be available in future are called prepaid expenses.

8.9 SELF ASSESSMENT QUESTIONS

1. Distinguish between Trading Account and Profit & Loss Account. Give a specimen of Trading and Profit & Loss Account with imaginary figures.
2. What is a Balance Sheet? What do you understand by Marshalling used in the Balance Sheet ? Illustrate the different forms of marshalling.
3. What are closing entries. Give the closing entries which are passed at the end of the accounting period.
4. What are adjustment entries? Why are these necessary for preparing final account.
5. Prepare a Trading Account of a businessman for the year ending 31st December, 1998 from the following data :

	Rs.
Stock on 1.1.1998	2,40,000
Cash purchases for the year	2,08,000
Credit purchases for the year	4, 00,000
Cash sales for the year	3,50,000
Credit sales for the year	6,00,000
Purchases returns during the year	8,000
Sales returns during the year	10,000
Direct expenses incurred :	
Freight	10,000
Carriage	2,000
Import Duty	8,000
Clearing Charges	12,000
Cost of goods distributed as free samples during the year	5,000
Goods withdrawn by the trader for personal use	2,000
Stock damaged by fire during the year	13,000

The cost of unsold stock on 31st December, 1998 was Rs.1,20,000 but its market value was Rs.1,50,000.

6. The following Trading and Profit and Loss Account has been prepared by a junior accountant of a firm. Criticise it and redraft it correctly.,

TRADING & PROFIT AND LOSS A/c

For the year ended 31st March, 1999

Particulars	Rs.	Particulars	Rs.
To Opening stock of raw material	7,352	By Closing stock of raw material	9,368
To Purchases	63,681	By Sales	1,70,852
To Sundry creditors	25,375	By Sundry debtors	40,659
To Carriage inwards	2,654	By Gross Loss c/d	8,182
To Carriage outwards	394		
To Salaries	24,370		
To Wages	51,963		
To Rent, Rates & Taxes	3,981		
To Repairs to factory	35,368		
To Insurance	13,923		
	2,29,061		2,29,061

PROFIT & LOSS ACCOUNT

Particulars	Rs.	Particulars	Rs.
To Gross Loss b/d	8,182	By Bank overdraft	17,681
To Interest on loans	6,180	By Interest on bank overdraft	123
To Dividend from investments	9,375	By net loss transferred to Balance Sheet	39,691
To Furniture purchases	17,681		
To Telephone charges	985		
To Electric charges	2,756		
To Depreciation - Plant & machinery	663		
To Charges general	11,673		
	57,495		57,495

7. On 31st March, 1997, Mr. Rohin's Debtors totalled Rs. 11,600, While making up final accounts of his business, he created a provision of 5% on debtors for doubtful debts. During the year ending on 31st March, 1998, actual bad debts were Rs. 480. Sundry Debtors on 31st March, 1998 amounted to Rs. 15,000 on which a provision of 5% was considered necessary.

Show : i) Adjusting entries for two years.

ii) Provision for Doubtful Debts Account for two years.

8. On 31st March, 2002 the following Trial Balance was extracted from the books of Mr. Deepak Kumar :

Debit Balances	Rs.	Credit Balances	Rs.
Sundry Debtors	20,100	Capital	28,000
Drawings	3,000	Loan On Mortgage	9,500
Bills receivable	6,882	Rent Received	250
Interest on Loan	300	Bill Payable	2,614
Cash at Bank	3,555	Discount Received	540
Motor Van	10,000	Sales	1,10,243
Stock on Ist April, 2001	6,839	Sundry Creditor	10,401
Cash in hand	2,050	Bad debts Reserve	710
Land and Building	12,000	Return Inwards	1,346
General Expenses	3,489		
Advertising	3,264		
Rent, Rates, Taxes and Insurance	2,891		
Salaries	9,097		
Bad debts	525		
Purchases	66,458		
Returns Inwards	7,821		
Carriage Inwards	2,929		
Carriage Outwards	2,404		
	<u>1,63,604</u>		<u>1,63,604</u>

Preparing Trading and Profit and Loss Account for the year ending 31st March, 2002 and Balance Sheet as on that after making following adjustments :

- (i) Closing stock is valued at Rs. 6,250
- (ii) Depreciate Land and Building at 2%, Motor van at 20%
- (iii) Salaries Rs. 750 and rates Rs. 350 are outstanding.
- (iv) Goods costing Rs. 500 were sent to a customer on sale or return for Rs. 600.
- (v) Goods costing Rs. 1,000 were taken by proprietor for private use, had been treated as credit sales.
- (vi) Prepaid insurance Rs. 150.
- (vii) Provision for Bad debts is to be maintained at 5% on Debtors.
- (viii) Provide interest on loan on mortgage 6% p.a. for 6 months.
- (ix) Provide for manager's commission at 10% on net profits after charging such commission.

8.10 SUGGESTED READINGS

- 1. R.L. Gupta, Advanced Accountancy.
- 2. S.N. Maheshwari, Advanced Accountancy.
- 3. M.C. Shukla, T.S. Grewal, Advanced Accounts.

Subject :Accounting for Managers

Updated by:Dr. Mahesh Chand Garg

Course Code : CP-104

Lesson No. : 9

PREPARATION OF FINAL ACCOUNTS OF A JOINT STOCK COMPANY AND ACCOUNTING PACKAGES LIKE TALLY, EX

STRUCTURE

- 9.0 Objective
- 9.1 Introduction
- 9.2 General Requirements of Companies Act
- 9.3 Form and contents of Profit and Loss Account
- 9.4 Profit and Loss Appropriation Account
- 9.5 Forms and Contents of Balance Sheet
- 9.6 Accounting Treatment of Special Items
- 9.7 Accounting Packages
- 9.8 Summary
- 9.9 Keywords
- 9.10 Self Assessment Questions
- 9.11 Suggested Readings

9.0 OBJECTIVES

You will learn from this lesson :

- (a) Requirements of the Companies Act for presentation of Final Accounts of a Company.
- (b) Treatment of Special Items relating to Company Final Accounts
- (c) Accounting Packages

9.1 INTRODUCTION

The joint stock companies, are legally required to prepare a set of financial statements to periodically assess the profits earned and to know the financial position of the company as on a specified date. Thus, like other business

enterprises, a limited company prepares the Income Statement and the Balance Sheet at the close of accounting year. However, in the case of companies registered under the Companies Act, the Act specifies that the books of accounts be maintained and also prescribes the format and contents in which financial statements are to be prepared. In addition to this, the Act provides that accounts must be audited by an external person called the auditor and the auditor has to submit its report in the prescribed format to the shareholders.

Since the owners or shareholders elect Board of Directors to manage company affairs and rely on the ability and skills of these directors to conduct the business in the most profitable manner, the Companies Act tries to protect the shareholders interest by prescribing a set of conventions according to which the financial statements are to be prepared and presented to the shareholders. The objective of the Companies Act in laying down various provisions with regard to accounts and audit is to ensure that adequate information is provided to the shareholders in order for them to judge the performance of the directors during an accounting period. The legal requirements laid down by the Companies Act therefore, assume a great importance in the preparation of the financial statements of a joint stock company. It is further relevant to point out here that the general principles for the preparation of profit and loss account and balance sheet of a company are the same as applicable to a sole proprietor/partnership business except that in case of a company these are prepared as per the set proforma with details as given in the Act. Whereas in case of individual proprietor or partnership no proforma has been prescribed. In case of a company accounts, relevant provisions of the companies law are to be taken care of.

9.1 GENERAL REQUIREMENTS OF COMPANIES ACT

Books of Accounts

Section 209 of the Companies Act prescribes for the maintenance of books of accounts by a company. According to this section, every company should keep at its registered office proper books of accounts with respect to :

- (a) all sums of money received and expended by the company and the matters in respect of which the receipt and expenditure take place
- (b) all sales and purchases of goods by the company
- (c) the assets and liabilities of the company.

Further, in the case of companies which are engaged in manufacturing, production, processing or mining activities, in addition to the financial accounts mentioned above, a set of cost accounts (if prescribed by the Central Government) must be maintained to show the utilization of material, labour and other items of cost.

This section also specifies that a company will not be deemed to be maintaining proper books of accounts unless,

- (i) all books necessary to give a true and fair view of the state of affairs of the company and to explain the transactions are maintained, and
- (ii) the books of accounts are maintained on accrual basis and according to the double entry system of accounting.

Preparation of Final Accounts

From sections 210-233 of the Companies Act deal with those provisions which have bearing on the preparation, presentation and publication of final accounts of a company. A brief description of these provisions is as follows:

1. *Section 210* deals with the preparation and presentation of the final accounts of a company at its annual general meeting.
2. *Section 211* prescribes 'form' and 'contents' of the Balance Sheet and Profit and Loss Account.
3. *Section 212* provides for disclosure of certain details in the Balance Sheet of a holding company in respect of its subsidiaries.

4. *Section 213* provides for the financial year of the holding company and subsidiary company.
5. *Section 214* makes provisions regarding the rights of the representatives of the holding company to inspect books of account kept by any of its subsidiaries.
6. *Section 215* provides that the Balance Sheet and Profit and Loss Account of a company shall be authenticated (signed) on behalf of the board of directors by its manager or secretary, if any, and by not less than two directors of the company, one of whom shall be a managing director, where there is one.
7. *Section 216* provides that the Profit and Loss Account shall be treated as an annexure to the Balance Sheet and auditor's report as an enclosure thereto.
8. *Section 217* provides that the report of the board of directors should be attached to every Balance Sheet laid before the shareholders at one general meeting.
9. *Section 218* provides for penalty for improper issue, circulation or publication of Balance Sheet or Profit and Loss Account.
10. *Section 219* deals with the right of the members to copies of Balance Sheet and Profit and Loss Account, auditor's report and every other document required by law to be annexed or attached to the Balanced Sheet which is to be presented in the general meeting.
11. *Section 220* provides that three copies of Balance Sheet and Profit and Loss Account have to be sent to the registrar within 30 days after an annual general meeting.

12. *Section 221* prescribes for giving details of the payments made to any director or other person, any other company, body corporate, firm or person.
13. *Section 222* provides that where any information which is required to be given in the accounts and is allowed to be given in the statement annexed to the accounts, it may be given in the board's report instead of in the account. Such a report of the directors shall be treated as an annexure to the accounts and the auditors shall report thereon only in so far as it gives the said information.
14. *Section 223* deals with certain companies like banking company, insurance, company, etc. who are required as per this section, to publish a statement in the form in Table F in Schedule I of the Companies Act.

The Companies Act further specifies the following with regard to the annual accounts to be drawn up by a company :

- (i) At every annual general meeting of the shareholders, the board of directors of the company should lay before the shareholders, a Balance Sheet as at the end of the accounting period which has just ended and also a Profit and Loss Account for such accounting period.
- (ii) The annual accounts of the company must be submitted in an annual general meeting within six months counted from the last day of the accounting period to which the accounts relate.

The periods to which the accounts relate is known as the financial year and it may be less than, equal to or greater than 12 months but cannot exceed 15 months. Where special permission has been granted by the registrar, the financial year may be extended to eighteen months.

9.3 FORM AND CONTENTS OF PROFIT AND LOSS ACCOUNT

The Companies Act, 1956, has not prescribed any standard format in which this account is to be presented. Section 211 (2) simply states that it will contain such information which may help in disclosing a true and fair view of the operations of the company and shall comply with the requirements of Part II Schedule VI so far as they are applicable thereto. The Profit and Loss Account should also disclose every material feature, including credits or receipts and debits or expenses in respect of non-recurring transactions or transactions of an exceptional nature. Various items of receipts and expenses should be arranged under the most convenient heads. The legal requirements with regard to Profit and Loss Account are summarised below :

Revenues

With respect to revenues received by a company, the following are required to be shown as per Part II of Schedule VI :

- (a) The turnover or the aggregate amount of sales effected by the company. If more than one class of goods have been sold by the company, then the amount of sales in respect of each class of goods sold along with details of quantities sold should be disclosed.
- (b) In the case of companies rendering or supplying services, the gross income derived from services rendered or supplied.
- (c) Amount of income from investment distinguishing between trade investments and other investments
- (d) Other income, specifying the nature of income.
- (e) Profits on investments.

- (f) Profits (which are material in amount) in respect of transactions which are of a kind not usually undertaken by the company or undertaken in circumstances of an exceptional or non-recurring nature.
- (g) Miscellaneous income.
- (h) Dividends from subsidiary companies.

Expenses

The following are the expenses which must be disclosed in the Profit and Loss Account :

- (a) In the case of manufacturing companies, the value of the raw materials consumed, giving item-wise break-up and the quantities consumed. While giving this break-up, as far as possible, all important basic raw materials should be shown as separate items. In the case of intermediates or components procured from other manufacturers are consumed, if the number of items are too many to be included in the break-up, then such items should be grouped under suitable headings without mentioning the quantities. However, all those items which in value individually account for 10 per cent or more of the total value of the raw material consumed should be shown distinctly in the break up with details of quantities consumed.
- (b) In the case of manufacturing companies, the opening and closing stock of goods produced, giving break-up in respect of each class of goods indicating the quantities of each class of goods produced.
- (c) In the case of trading companies, the value of purchases made and of the opening and closing stocks. This information should be provided in respect of each class of goods traded by the company. The quantity details should also be provided.

- (d) If a company is both a manufacturing and a trading company, it is sufficient if the total amounts are shown in respect of the opening and closing stocks, purchases, sales and consumption of raw material with value and quantity details.
- (e) In the case of companies having works in progress, the opening and closing values of the works in progress.
- (f) The amount provided for depreciation, renewals or diminution in value of fixed assets. If no provision has been made for depreciation, this fact should be stated and the quantum of arrears of depreciation should be disclosed by way of a note.
- (g) Consumption of stores and spare parts.
- (h) Power and fuel.
- (i) Repairs to buildings.
- (j) Repairs to machinery.
- (k) Salaries, wages and bonus.
- (l) Contribution to provident fund and other funds.
- (m) Workmen and staff welfare expenses.
- (n) Insurance.
- (o) Rates and taxes, excluding taxes on income.
- (p) Miscellaneous expenses. Any item under which expenses exceed one per cent of the total revenue of the company or Rs. 5,000, whichever is higher, must be shown as a separate and distinct item against an appropriate account head in the Profit and Loss Account and should not be combined with any other item and shown under this head of 'Miscellaneous Expenses'.

- (q) Losses on investments.
- (r) Losses on transactions which are of a kind, not usually undertaken by the company or undertaken in circumstances of an exceptional or non-recurring nature.
- (s) The amount of interest on the company's debentures and other fixed loans stating separately the amount of interest, if any, paid or payable to the managing director or manager.
- (t) The amount of income tax payable.
- (u) The aggregate amount of the dividends paid, and proposed, and stating whether such amounts are subject to deduction of income-tax or not.
- (v) Provisions for losses of subsidiary companies.
- (w) Amounts reserved for repayment of share capital and repayment of loans.
- (x) Any material amounts set aside to reserves, but not including provisions made to meet any specific liability, contingency or commitment. Any material amounts withdrawn from such reserves.
- (y) Any material amounts set aside to provisions made for meeting specified liabilities, contingencies or commitments. Any material amounts withdrawn from such provisions, as no longer required.

In addition to the above expenses, expenses relating to sales, such as commission paid to sole selling agents and other selling agents, brokerage and discount on sales, other than the usual trade discount should also be shown separately.

The amount by which any items shown in the Profit and Loss Account are affected by any change in the basis of accounting, if material, should be disclosed separately.

In respect of all items shown in the Profit and Loss Account, the corresponding amounts for the immediately preceding financial year should also be given.

Notes to Profit and Loss Account

According to Part II of Schedule VI, certain information has to be provided by way of notes to Profit and Loss Account. The information to be so provided is outlined below :

1. The following payments provided or made during the financial year to the directors (including managing directors or manager, if any, by the company, the subsidiaries of the company and any other person) :
 - (a) Managerial remuneration paid or payable under Section 198 of the Companies Act.
 - (b) Other allowances and commission including guarantee commission.
 - (c) Any other perquisites or benefits in cash or in kind (stating approximate money value where practicable).
 - (d) Pensions.
 - (e) Gratuities.
 - (f) Payments from provident funds, in excess of own subscriptions and interest thereon.
 - (g) Compensation for loss of office.
 - (h) Consideration in connection with retirement from office.

If commission is payable to the directors including managing director or manager as a percentage of profits, then the notes should give a statement showing the computation of net profit in accordance with the Act and also gives details of the calculation of such commission.

2. The notes should contain detailed information with regard to amounts paid to the auditor, whether as fees, expenses or otherwise for services rendered. These payments should be classified into payments received by the auditor as :

- (a) Auditor
- (b) As adviser, or in any other capacity, in respect of
 - (i) taxation matters
 - (ii) company law matters
 - (iii) management services, and
- (c) In any other manner.

3. In the case of manufacturing companies, the notes should give detailed quantitative information in respect of each class of goods manufactured with regard to the following :

- (a) The licensed capacity (where license is in force)
- (b) The installed capacity and
- (c) The actual production

4. The notes to the Profit and Loss Account should also contain the following information :

- (a) Value of imports calculated on C.I.F. basis by the company during the financial year in respect of :
 - (i) raw materials
 - (ii) components and spare parts
 - (iii) capital goods.

- (b) Expenditure in foreign currency during the financial year on account of royalty, know-how, professional consultation fees, interest and other matters.
 - (c) Value of all imported raw materials, spare parts and components consumed during the financial year and the value of all indigenous raw materials, spare parts and components similarly consumed and the percentage of each of total consumption
 - (d) The amount remitted during the year in foreign currencies on account of dividends, with a specific mention of the non-resident shareholders and the number of shares held by them on which dividends were paid.
 - (e) Earnings in foreign exchange classified under the following heads, namely:
 - (i) Export of good calculated in F.O.B. basis
 - (ii) Royalty, know-how, professional and consultation fees
 - (iii) Interest and dividend
 - (iv) Other income, indicating the nature thereof.
5. The notes to the Profit and Loss Account should also contain break-up of the expenditure incurred on employees who
- (i) If employed throughout the financial year were in receipt of remuneration for that year which in the aggregate was not less than Rs. 3,00,000 or
 - (ii) if employed for part of the financial year were in receipt of remuneration for any part of that year at a rate which in the aggregate was not less than Rs. 25,000 per month.

This note should also indicate the number of employees falling in each of the above two categories. Usually the remuneration paid is broken up into:

- (a) Salaries, perquisite, etc. and
- (b) Contribution to provident fund and other funds.

9.4 PROFIT AND LOSS APPROPRIATION ACCOUNT

Sometimes companies divide their income statement into three parts:

- (a) Trading Account
- (b) Profit and Loss Account
- (c) Profit and Loss Appropriation Account

The account showing the disposal of profits is known as Profit and Loss Appropriation Account. The balance on Profit and Loss Account is transferred to this Profit and Loss Appropriation Account. Profits available for dividend to shareholders are known as divisible profits. The Directors may decide to retain a certain amount to strengthen the companies finances. The amount retained may take the form of transfer to various reserves and funds. It is a wise policy to keep aside certain portion of divisible profit in the form of reserves and funds before distributing entire divisible profits among the shareholders as dividend. Therefore, the account which shows how the divisible profits of the company have been dealt with is known as Profit and Loss Appropriation Account, as appropriation means to keep aside.

The amount brought forward from the previous year is put on the credit side together with current year's profit. On the debit side of this account, the following items are usually found :

- i) Transfer to General Reserve.
- ii) Transfer to Dividend Equalisation Fund (Dividend Equalisation Fund means a fund created out of profits available for dividend for the purpose of stable dividend policy i.e. making the rate of dividend uniform from year to year).
- iii) Transfer to Sinking Fund for Redemption of Debentures.

- iv) Dividend (Interim/Final, paid or proposed).
- v) Balance if any, carried to Balance Sheet. Therefore, this Account, generally appears as under :

Profit and Loss Appropriation Account

Dr.		Cr.	
Particulars	Rs.	Particulars	Rs.
To Bal. b/d (Dr. bal. from last year if any, as per Trial Balance) To Net Loss during the year, if any To General Reserve (transfer) To Dividend Equalisation Fund (transfer) To Sinking Fund for Redemption of Debentures To Transfer to other Reserves & Funds To Dividend (Interim or Final, Paid/ proposed) To Balance c/d to Balance Sheet		By Balance b/d from last year (As per Trial Balance) By Savings in the provision for Taxation By Net Profit during the year (as per P&L A/c) By Transfer from Reserves, if any By Bal. c/d to Balance Sheet	

9.5 FORM AND CONTENTS OF BALANCE SHEET

According to Section 210 of the Companies Act, a company is required to prepare a Balance Sheet at the end of each trading period. Section 211 requires the Balance Sheet to be set up in the prescribed form. This provision is not applicable to banking, insurance, electricity and the other companies governed by special Acts. The Central Government has also the power to exempt any class of companies from compliance with the requirement of the prescribed form if it

deems to be in public interest. The object of prescribing the form is to elicit proper information from the company so as to give a 'true and fair' view of the state of the company's affairs. As a matter of fact both window dressing and creating secret reserves will be considered against the provisions of Section 211.

Schedule VI, Part I gives the prescribed form of a company's Balance Sheet. Notes and instructions regarding various items have been given in brackets below each item. It may be noted that if information required to be given under any of the items or sub-items in the prescribed form cannot be conveniently given on account of lack of space, it may be given in a separate schedule or schedules. Such schedules will be annexed to and form part of the Balance Sheet.

Schedule VI, Part I permits presentation of Balance Sheet both in horizontal as well as vertical forms. The forms with necessary notes, explanations, etc., are given below :

A. HORIZONTAL FORM OF BALANCE SHEET
SCHEDULE VI, PART I
(See Section 211)

Balance Sheet of (Here enter the name of the company) as on..... (Here enter the date as at which the balance sheet is made out)

Figures for the previous year Rs. (1)	Liabilities (2)	Figures for the current year Rs. (3)	Figures for the previous year Rs. (4)	Assets (5)	Figures for the current year Rs. (6)
	<p>Share Capital : Authorised.....Shares of Rs. each Issued : (distinguishing between the various classes of capital and stating the particulars specified below, in respect of each class) shares of Rs..... each. Subscribed: (distinguishing between the various classes of capital and stating the particulars specified below, in respect of each class) shares of Rs..... each. Rs. called up. (Of the above shares.....shares are allotted as fully paid up pursuant to contract without payments being received in cash) (Of the above shares... shares are allotted as fully paid up by way of bonus shares).</p>			<p style="text-align: center;">Assets</p> <p style="text-align: center;">(5)</p> <p>Fixed Assets : Distinguishing as far as possible between expenditure upon : (a) goodwill (b) land (c) buildings (d) leaseholds (e) railway sidings (f) plant and machinery (g) furniture and fittings (h) development of property (i) patents, trade marks and designs (j) livestock, and (k) vehicles, etc. (Under each head the original cost and the additions thereto and deductions therefrom during the year, and the total depreciation written off or provided shall be allotted under the different asset heads and deducted in arriving at the value of Fixed Assets.</p>	

(1)	(2)	(3)	(4)	(5)	(6)
	<p>(Specify the sources from which bonus shares are issued, e.g., capitalisation of profits or Reserves or from Shares Premium Account.</p> <p><i>Less :</i> Calls unpaid : (ii) By Directors (iii) By others</p> <p><i>Add:</i> Forfeited shares : (amount originally paid up) (Any capital profit on reissue of forfeited shares should be transferred to Capital Reserve)</p> <p><i>Notes :</i></p> <ol style="list-style-type: none"> Terms of redemption or conversion (if any) of any redeemable preference capital are to be stated together with earliest date of redemption or conversion. Particulars of any option on unissued Share Capital are to be specified. Particulars to the different classes of preference shares are to be given. <p>These particulars are to be given along with Share Capital.</p> <p>In the case of subsidiary companies, the number of shares held by the holding company as well as by the ultimate holding company and its subsidiaries shall be separately stated in respect of Subscribed Share Capital. The auditor is not required to certify the correctness of such shareholdings as certified by the management.</p> <p>Reserves and Surplus :</p> <ol style="list-style-type: none"> Capital Reserves Capital Redemption Reserves 			<p>In every case where the original cost cannot be ascertained, without unreasonable expense or delay, the valuation shown by the books is to be given. For the purpose of this paragraph, such valuation shall be the net amount at which an asset stood in the company's books at the commencement of this Act after deduction of the amounts previously provided or written off for depreciation or diminution in values, and where any such asset is sold, the amount of sale proceeds shall be shown as deduction.</p> <p>Where sums have been written off on a reduction of capital or a revaluation of assets, every Balance Sheet, (after the first Balance Sheet) subsequent to the reduction or revaluation shall show the reduced figures with the date of the reduction in place of the original cost.</p> <p>Each Balance Sheet for the first five years subsequent to the date of the reduction, shall show also the amount of the reduction made.</p> <p>Similarly, where sums have been added by writing up the assets, every Balance Sheet subsequent to such writing up shall show the increased figures with the date of the increase in place of the original cost. Each Balance Sheet for the first five years subsequent to the date of the writing up shall also show the amount of increase made.</p> <p>Investments :</p> <p>Showing nature of investments and mode of valuation, for example, cost or market value, and distinguishing between :</p> <ol style="list-style-type: none"> Investments in Government or Trust Securities. Investment in shares, debentures or bonds 	

(1)	(2)	(3)	(4)	(5)	(6)
	<p>3. Shares Premium Account (Showing details of its utilisation in the manner provided in Section 78 in the year of utilisation).</p> <p>4. Other reserves specifying the nature of each Reserve and the amount in respect thereof.</p> <p><i>Less :</i> Debit balance in Profit and Loss Account (if any)</p> <p>(The debit balance in the Profit and Loss Account shall be shown as a deduction from the uncommitted reserves, if any)</p> <p>5. Surplus, i.e. balance in Profit and Loss Account after providing for proposed allocations namely; Dividend, Bonus or Reserves</p> <p>6. Proposed additions to Reserves.</p> <p>7. Sinking Funds.</p> <p>(Additions and deductions since last balance sheet to be shown under each of the specified heads. The word "funds" in relation to any "Reserve" should be used only where such Reserve is specifically represented by earmarked investments).</p> <p>Secured Loans :</p> <ol style="list-style-type: none"> 1. Debentures. 2. Loans and Advances from Banks 3. Loans and Advances from Subsidiaries. 4. Other Loans and Advances. <p>(Loans from directors and/or manager should be shown separately). Interest accrued and due on Secured Loans should be included under the appropriate sub-heads under the head "Secured Loans".</p>			<p>(Showing separately shares fully paid up and partly paid up and also distinguishing the different classes of shares and showing also in similar details investment in shares, debentures or bonds of subsidiary companies).</p> <ol style="list-style-type: none"> 3. Immovable properties 4. Investments in the capital of partnership firms <p>(Aggregate amount of company's quoted investments and also the market value thereof shall be shown).</p> <p>(Aggregate amount of company's unquoted investment shall also be shown).</p> <p>Current Assets, Loans and Advances :</p> <p>(A) Current Assets :</p> <ol style="list-style-type: none"> 1. Interest Accrued on Investments. 2. Stores and Spare Parts. 3. Loose Tools 4. Stock-in-Trade 5. Work-in-Progress <p>[In respect of (2) and (4), mode of valuation of stock shall be stated and the amount in respect of raw materials shall also be stated separately where practicable. Mode of valuation of work-in-progress shall be stated].</p> <ol style="list-style-type: none"> 6. Sundry Debtors (a) Debts Outstanding for a period exceeding six months. (b) Other Debts <p><i>Less :</i> Provision</p> <p>(The amounts to be shown under Sundry Debtors shall include the amounts due in respect of goods</p>	

(1)	(2)	(3)	(4)	(5)	(6)
	<p>The nature of security to be specified in each case. Where loans have been guaranteed by managers and/or directors a mention thereof shall also be made and also the aggregate amount of such loans under each head. In case of Debentures, terms of redemption or conversion (if any) are to be stated together with earliest date of redemption or conversion.</p> <p>Unsecured Loans :</p> <ol style="list-style-type: none"> 1. Fixed Deposits 2. Loans and Advances from Subsidiaries 3. Short Term Loans and Advances : <ol style="list-style-type: none"> (a) From Banks (b) From Others <p>(Short term loans include those which are due for repayment not later than one year as at the date of balance sheet).</p> <ol style="list-style-type: none"> 4. Other Loans and Advances : <ol style="list-style-type: none"> (a) From Banks (b) From Others <p>(Loans from directors and/or manager should be shown separately.</p> <p>Interest accrued and due on Unsecured Loans should be included under the appropriate sub-head under the head "Unsecured Loans".</p> <p>Where Loans have been guaranteed by manager, and/or directors, a mention thereof shall also be made together with the aggregate amount of such loans under such head. This does not apply to Fixed Deposits).</p> <p>Current Liabilities and Provisions :</p> <p>A. Correct Liabilities</p> <ol style="list-style-type: none"> 1. Acceptances. 2. Sundry Creditors 3. Subsidiary Companies 4. Advance payments and unexpired discounts for the portion for which value has still to be given, i.e., in the case of the following companies : Newspapers, Fire Insurance, Theatres, Clubs, Banking, Steamship companies, etc. 			<p>sold or services rendered or in respect of other contractual obligations but shall not include the amounts which are in the nature of loans or advances).</p> <p>In regard to sundry debtors particulars to be given separately of :</p> <ol style="list-style-type: none"> (a) debts considered good and in respect of which the company is fully secured; (b) debts considered good for which the company holds no security other than the debtor's personal security; and (c) debts considered doubtful or bad. <p>Debts due by directors or other officers of the company or any of them either severally or jointly with any other person or debts due by firms or private companies respectively in which any director is a partner or a director or a member to be separately stated.</p> <p>Debts due from other companies under the same management within the meaning of sub-section (IB) of Section 370 to be disclosed with the names of the companies. The maximum amount due by directors or other officers of the company at any time during the year to be shown by way of a note.</p> <p>The Provision to be shown under this head should not exceed the amount of debts stated to be considered doubtful or bad and any surplus of such Provision, if already created, should be shown at every closing under "Reserves and Surplus" (in the Liabilities side) under a separate sub-head "Reserve for Doubtful or Bad Debts".</p> <p>7A. Cash balance on hand. 7B. Bank Balance : <ol style="list-style-type: none"> (a) with Scheduled Banks. (b) with others. </p> <p>(In regard to Bank balances particulars to be given separately of :</p> <ol style="list-style-type: none"> (a) the balances lying with Scheduled Banks on current accounts, call accounts and deposit accounts (b) the names of the bankers other than Scheduled Banks and the balances lying with each such banker on current account, call account and deposit account and the maximum amount outstanding at any time during the year with each such banker; and 	

(1)	(2)	(3)	(4)	(5)	(6)
	<p>5. Unclaimed Dividends. 6. Other Liabilities (if any). 7. Interest accrued but not due on loans.</p> <p>B. Provisions</p> <p>8. Provision for Taxation. 9. Proposed Dividends. 10. For Contingencies. 11. For Provident Fund Scheme. 12. For Insurance, pension and similar staff benefit schemes. 13. Other provisions.</p> <p>A foot-note to the balance sheet may be added to show separately :</p> <ol style="list-style-type: none"> 1. Claims against the company not acknowledged as debts. 2. Uncalled liability on shares partly paid. 3. Arrears of fixed cumulative dividends. <p>(The period for which the dividends are in arrears or if there is more than one class of shares, the dividends on each such class that are in arrears shall be started. The amount shall be stated before deduction of income-tax, except that in the case of tax-free dividends the amount shall be shown free of income-tax and the fact that it is so shown shall be stated).</p> <ol style="list-style-type: none"> 4. Estimated amount of contracts remaining to be executed on capital account and not provided for. 5. Other moneys for which the company is contingently liable. <p>The amount of any guarantees given by the company on behalf of directors or other officers of the company shall be stated and where practicable, the general nature and amount of each such contingent liability, if material shall also be specified.</p>			<p>(c) the nature of the interest, if any, of any director or his relative in each of the bankers (other than Scheduled Banks referred to in (b) above)).</p> <p>(B) Loans and Advances :</p> <ol style="list-style-type: none"> 8. (a) Advances and loans to subsidiaries. (b) Advances and loans to partnership firm in which the company or any of its subsidiaries is a partner. 9. Bills of Exchange. 10. Advances recoverable in cash or in kind or for value to be received, e.g., Rates, Taxes, Insurance, etc. 11. Balances with Customs, Port Trust, etc. (where payable on demand). <p>[The instructions regarding Sundry Debtors apply to "Loans and Advances" also. The amounts due from other companies under the same management within the meaning of sub-section (IB) of Section 370 should also be given with the names of companies; the maximum amount due from every one of these at any time during the year must be shown].</p> <p>Miscellaneous Expenditure (to the extent not written off or adjusted).</p> <ol style="list-style-type: none"> 1. Preliminary expenses. 2. Expenses including commission or brokerage or under-writing or subscription of shares or debentures. 3. Discount allowed on the issue of shares or debentures. 4. Interest paid out of capital during construction (also stating the rate of interest). 5. Development expenditure not adjusted. 6. Others sums (specifying nature). <p>Profit and Loss Account (Show here the debit balance of Profit and Loss Account carried forward after deduction of the uncommitted reserves, if any).</p>	

Notes :

1. Paise can also be given in addition to Rupees, if desired.
2. Dividends declared by subsidiary companies after the date of the Balance Sheet should not be included unless they are in respect of a period which closed on or before the date of the Balance Sheet.
3. Any reference to benefits expected from contracts to the extent not executed shall not be made in the Balance Sheet but shall be made in the Board's report.
4. Particulars of any redeemed debentures which the company has power to issue should be given.
5. Where any of the company's debentures are held by a nominee or a trustee for the company, the nominal amount of the debentures and the amount at which they are stated in the books of the company shall be stated.
6. A statement of investments (whether shown under "Investments" or under "Current Assets" as Stock-in-Trade) separately classifying trade investments and other investments should be annexed to the Balance Sheet, showing the names of the bodies corporate (including separately the names of the bodies corporate under the same management) in whose shares or debentures, investments have been made (including all investments whether existing or not, made subsequent to the date as at which the previous Balance Sheet was made out) and the nature and extent of the investments so made in each such body corporate; provided that in the case of an investment company, that is to say, a company whose principal business is the acquisition of shares, stock, debentures or other securities, it shall be sufficient if the statement shows only the investments existing on the date as at which the Balance

- Sheet has been made out. In regard to the investments in the capital of partnership firms, the names of the firms (with the names of all their partners, total capital and the shares of each partner) shall be given in the statement.
7. If, in the opinion of the Board, any of the current assets, loans and advances have not a value on realisation in the ordinary course of business at least equal to the amount at which they are stated, the fact that the Board is of that opinion shall be stated.
 8. Except in the case of the first Balance Sheet laid before the company after the commencement of the Act, the corresponding amounts of the immediately preceding financial year for all items shown in the Balance Sheet shall be also given in the Balance Sheet. The requirements in this behalf shall in case of companies preparing quarterly or half-yearly accounts, etc., relate to the Balance Sheet for the corresponding date in the previous year.
 9. Current accounts with Directors and Manager, whether they are in credit or debit, shall be shown separately.
 10. The information required to be given under any of the items or sub-items in the Form, if it cannot be conveniently included in the Balance Sheet itself, shall be furnished in a separate Schedule or Schedules to be annexed to and form part of the Balance Sheet. This is recommended when items are numerous.
 11. Where the original cost of fixed assets and additions and deductions thereto, relate to any fixed asset which has been acquired from a country outside India, and in consequence of a change in the rate of exchange at any time after the acquisition of such assets, there has been an increase or reduction in the liability of the company, as expressed in India currency, for making payment towards the whole or a part of

the cost of the asset, or for repayment of the whole or a part of moneys borrowed by the company from any person, directly or indirectly, in any foreign currency specifically for the purpose of acquiring the asset (being in either case the liability existing immediately before the date on which the change in the rate of exchange takes effect), the amount by which the liability is so increased or reduced during the year, shall be added to, or as the case may be, deducted from the cost, and the amount arrived at after such addition or deduction shall be taken to be the cost of the fixed assets.

Explanation 1: This paragraph shall apply in relation to all Balance Sheets that may be made out as at the 6th day of June, 1966, or any day thereafter and where, at the date of issue of the notification of the Government of India, in the Ministry of Industrial Development and Company Affairs (Department of Company Affairs), G.S.R. No. 129, dated the 3rd day of January, 1968, any Balance Sheet in relation to which the paragraph applies, has already been made out and laid before the company in annual general meeting, the adjustment referred to in this paragraph may be made in the first Balance Sheet made out after the issue of the said notification.

Explanation 2 : In this paragraph, unless the context otherwise requires, the expressions "rate of exchange", "foreign currency" shall have the meanings respectively assigned to them under sub-section (1) of section 43A of the Income Tax Act, 1961 (43 of 1961), and Explanation 2 and Explanation 3 of the said sub-section shall, as far as may be, apply in relation to the said paragraph as they apply to the said sub-section (1).

B. VERTICAL FORM

Name of the Company

Balance Sheet as at

(1)	Schedule No. (2)	Figures as at the end of current financial year (3)	Figures as at the end of previous financial year (4)
<p><i>I. Sources of Funds</i></p> <p>(1) Shareholders funds :</p> <p style="padding-left: 20px;">(a) Capital</p> <p style="padding-left: 20px;">(b) Reserves and surplus</p> <p>(2) Loans funds :</p> <p style="padding-left: 20px;">(a) Secured loans</p> <p style="padding-left: 20px;">(b) Unsecured loans</p> <p style="padding-left: 40px;">Total</p> <p><i>II Application of Funds</i></p> <p>(1) Fixed assets :</p> <p style="padding-left: 20px;">(a) Gross block</p> <p style="padding-left: 20px;">(b) <i>Less</i> : depreciation</p> <p style="padding-left: 20px;">(c) Net block</p> <p style="padding-left: 20px;">(d) Capital work-in-progress</p> <p>(2) Investments</p> <p>(3) Current assets, loans and advances:</p> <p style="padding-left: 20px;">(a) Inventories</p> <p style="padding-left: 20px;">(b) Sundry debtors</p> <p style="padding-left: 20px;">(c) Cash and bank balances</p> <p style="padding-left: 20px;">(d) Other current assets</p> <p style="padding-left: 20px;">(e) Loans and advances</p> <p style="padding-left: 20px;"><i>Less</i> : Current Liabilities & provisions</p> <p style="padding-left: 40px;">(a) Liabilities</p> <p style="padding-left: 40px;">(b) Provisions</p> <p>Net current assets</p> <p>(4) (a) Miscellaneous Expenditure to the extent not written off or adjusted</p> <p style="padding-left: 20px;">(b) Profit and Loss Account</p> <p style="padding-left: 40px;">Total</p>			

Notes :

1. Details under each of the items in Vertical Balance Sheet shall be given in separate Schedules. The Schedules shall incorporate all the information required to be given under A-Horizontal Form read with notes containing general instructions of preparation of Balance Sheet.
2. The Schedules referred to above, accounting policies and explanatory notes that may be attached shall form an integral part of the Balance Sheet.
3. The figures in the Balance Sheet may be rounded off to the nearest '000 or '00 as may be convenient or may be expressed in terms of decimals of thousands.
4. A footnote to the Balance Sheet may be added to show separately contingent liabilities.

In India, a joint stock company can prepare its Balance Sheet either in horizontal or vertical form. Of the two forms of the Balance Sheet, vertical form is a better form because it speaks out the correlation of every item with the other items and conveys more meaning to the layman.

Abridged Balance Sheet

As an economy device, the Companies (Amendment) Act, 1988 introduced the concept of Abridged Balance Sheet vide Section 219(1) (b) (iv). As per this provision, the companies need not send the detailed Balance Sheet together with many schedules and reports to shareholders and may send only the abridged Balance Sheet, Profit and Loss Account, Directors's Report and Auditors' Report as annual report. Numerous schedules to the Balance Sheet and detailed statements need not be a part of the annual report. However, SEBI has prescribed that a detailed Balance Sheet has to be furnished in the case of listed companies.

9.6 ACCOUNTING TREATMENT OF SPECIAL ITEMS

In addition to the provisions and general principles prescribed for the preparation of financial statements of a company, there are some items which require specific accounting treatment.

1. Interest on Debentures

Debentures interest is a business expenses and therefore, it is a charge against profit and as such Profit and Loss Account is debited with the total amount of interest payable during the accounting year whether the company has earned the profit or not.

2. Discount on the Issue of Debentures

Discount or costs, e.g. commission, brokerage, etc. incurred on the issue of debentures should normally be written off as early as possible but in no case later than the date of redemption. The unwritten balance will be shown in the Balance Sheet under Miscellaneous expenditure on the asset side.

3. Preliminary Expenses

Such expenses include the costs of formation of a company and since their amount is usually large, it is not desirable to write off them in one year. Instated preliminary expenses are spread over a number of years and Profit and Loss Account is debited with certain fraction every year. The unwritten amount is shown under Miscellaneous Expenditures on the asset side of the Balance Sheet.

4. Call-in-Arrears

This item represents the amount not paid by the shareholders on the calls made on them by the company. If this item is given in the trial balance, it is shown in the Balance Sheet on the liabilities side as a deduction from the called up amount under the main head of share capital. But if this item is given outside the trial balance as an adjustment, it would mean that the trial balance shows only the paid up capital and

not called up capital. The amount of call-in-arrears is then added to the paid up capital to make the later as called up capital and then deducted again.

5. **Calls-in Advance**

It is a debt on the company until the calls are made and the amount received in advance is adjusted. A company may also pay interest on calls-in-advance and the rate of interest is usually stated in the articles. It should be treated as a current liability and shown under the heading current liabilities and provisions.

6. **Auditors Payments**

Payments made to auditors for auditing the accounts and for doing any other work for the company should be mentioned separately.

7. **Managerial Remuneration**

The remuneration paid to managerial personal (e.g. directors, managing directors or manager) of a company in any form or made is charge against profits and thus shown in the debit side of the Profit and Loss Account. The mode of payment of the remuneration may include the fee for attending the meetings of the Board, monthly salary, a fixed percentage of profit and so on.

The Companies Act has imposed severe restrictions on the managerial remuneration payable by a public company or a private company which is a subsidiary of a public company.

Section 198(i) provides that the total managerial remuneration in respect of any year is subject to an overall limit of 11 per cent of the net profits of the company in that year.

8. **Dividends**

Dividends may be defined as the share of profits that is payable to each shareholder of the company. The Companies Act lays down that dividends can be paid out of profits only and prohibits the payment of any dividend out of capital. Also,

dividends shall be paid in cash only. A company may pay dividends from any or all of the three following sources :

- (I) profits of the current year
- (II) undisturbed profits of previous years
- (III) moneys provided by the Central or any State Government for the payment of dividends in pursuance of a guarantee given by the Government concerned.

A dividend once declared, becomes a debt. Dividend is paid out of profits on paid-up capital of the company. Calls-in-Advance cannot be treated as part of paid up capital for declaration of dividends.

(a) Proposed Dividend : The dividend recommended by the directors is termed as "Proposed Dividend". Unless otherwise stated, the dividend at given rate is calculated on paid-up capital and it is (amount of proposed dividend) is debited to Profit and Loss Appropriation Account and shown on the liability side of the Balance Sheet under the heading "Provisions".

(b) Interim Dividend : An Interim Dividend is a dividend paid by the directors at any time between two annual general meetings. It is always debited to Profit and Loss Appropriation Account. The interim dividend is usually paid for a period of six months. Its calculation depends upon the language of the rate of dividend.

The directors may recommend another dividend when the final figures of profits are available. Such dividend is known as final dividend. When final dividend is declared, interim dividend is not adjusted unless the resolution specifies otherwise.

(c) Unclaimed Dividend : Dividend declared but not claimed by some shareholders for some reason, such amount of dividend (not claimed) is known as "Unclaimed Dividend". It is always shown on the liability side of the Balance Sheet under the heading "Current Liabilities".

Illustration-1 : The Steamship Company Limited has an Authorised Capital of 1,50,000 Equity Shares of Rs. 100 each. The following balances have been extracted on 31st March, 2002 from the books of the company :

	Rs.		Rs.
Subscribed Capital	1,00,00,000	Dividend Equalisation Reserve	21,00,000
Steamers at cost	1,31,00,000	Provision for Doubtful Debts	2,62,000
Purchase of S.S. Jalaganga on 1.10.2001	40,75,000	Unclaimed Dividends	89,250
Furniture and Fittings <i>less</i> Depreciation Rs. 36,000	1,42,500	Sundry Creditors	9,93,500
Unexpired Insurance	1,88,250	Final Call unpaid on 2,500 shares	62,500
General Reserve	26,00,000	Stock of Provision, Stores, Coal etc.	3,58,000
Steamer's Purchase Reserve	8,02,500	Investments (at cost in shares of Companies)	8,54,000
Provisions and Stores	26,03,000	Dividend accrued on the above	22,500
Coal	31,89,000	Voyage Receipts	1,11,89,450
Book Debts of which Rs. 2,87,500 are doubtful	16,59,000	Steamer's Depreciation Account	37,00,000
Loan to Directors	75,000	Dividend from Investments	78,900
Miscellaneous Voyage Expenses	31,51,000	Profit and Loss Account (Credit Balance)	1,29,000
Expenses of Management	16,04,000	Cash and Bank Balances	8,60,850

You are required to prepare the Profit and Loss Account and the Balance Sheet of the Company in a form which complies with the requirements of the Companies Act, after taking the following information into consideration and after necessary assumptions :

1. The Articles of Association of the Company provide as under :
 - (a) Depreciation at the rate of 6% should be charged to the Profit and Loss Account on the original cost of steamers owned by the Company;
 - (b) Surplus, if any, over the book value of a steamer on realisation should be provided for;
 - (c) In the event of inadequacy of profits, Dividend Equalisation Reserve should be made use of to the extent it is necessary to make good the deficiency in the proposed amount of dividend.
2. S.S. Jalbharat was acquired at a cost of Rs. 35,00,000 on 1.8.1999. It met with an accident on 1.12.2001 and proved a total loss. The underwriters have agreed to settle the claim for Rs. 17,50,000.
3. The Equity shares on which the final call was unpaid were forfeited by the Board during the year and have not been reissued.

4. Furniture is to be depreciated a ten per cent on original cost.
5. In the Profit and Loss Account of the year 1999-2000, a provision of Rs. 1,25,000 was made in respect of a claim for damages. This claim was settled in December, 2001 for Rs. 89,000 and the balance of the provision is included in the item "Sundry Creditors".
6. The directors propose to pay a dividend of Rs.5 per share, subject to deduction of tax.

Solution :**Profit and Loss Account of the Steamship Company Ltd.**

Dr.	<i>for the year ending 31st March, 2002</i>		Cr.
	Rs.		Rs.
To Coal Consumed	31,89,000	By Voyage Receipts	1,11,89,450
To Provision and Stores	26,03,000	By Dividend from Investments	78,900
To Miscellaneous Voyage Expenses	31,51,000	By Net Loss c/d	14,47,000
To Expenses of Management	16,04,000		
To Depreciation :			
Steamers 8,20,500			
Furniture and Fittings <u>17,850</u>			
	8,38,350		
To Loss on S.S. Jalbharat destroyed in an accident (1)	13,30,000		
	<u>1,27,15,350</u>		<u>1,27,15,350</u>
To Net Loss b/d	14,47,000	By Balance b/d from previous year	1,29,000
To Proposed Dividend @ Rs. 5 per share on 97,500 shares	4,87,500	By Provision for claim no longer required (1,25,000-89,000)	36,000
		By Transfer from Dividend Equalisation Reserve	3,22,500
		By Balance carried to the Balance Sheet	14,47,000
	<u>19,34,500</u>		<u>19,34,500</u>

Working Notes :

(1) Loss on S.S. Jalbharat destroyed in an accident has been calculated as follows :

	Rs.
Cost of S.S. Jalbharat purchased in 1999-2000	35,00,000
<i>Less</i> : Depreciation for 2 years (1999-2000 & 2000-2001) @ 6% on original cost	4,20,000
Book value on 1.4.2001	<u>30,80,000</u>
<i>Less</i> : Claim admitted by the underwriters	17,50,000
Loss	<u><u>13,30,000</u></u>

Balance Sheet of Steamship Company Limited*as on 31st March, 2001*

	Rs.		Rs.
Share Capital– as per Schedule A	99,37,500	Fixed Assets– as per Schedule D	96,99,150
Reserve and Surplus–as per Schedule B	37,33,000	Investment–Share at Cost	8,54,000
Current Liabilities and Provisions– as per Schedule C	15,34,250	Current Assets, Loans and Advances as per Schedule E	46,51,600
	<u>1,52,04,750</u>		<u>1,52,04,750</u>

SCHEDULES FORMING PART OF THE BALANCE SHEET**Schedule A : Share Capital**

Authorised : 1,50,000 Equity Shares of Rs. 100 each	1,50,00,000
Issued : 1,00,000 Equity Shares of Rs. 100 each	<u>1,00,00,000</u>
Subscribed : 97,500 (1,00,000–2,500 shares forfeited) Equity Shares of Rs. 100 each fully paid up	97,50,000
<i>Add</i> : Forfeited Shares (Amount received on 2,500 shares forfeited)	1,87,500
	<u><u>99,37,500</u></u>

Schedule B : Reserves and Surplus

	Rs	Rs.
Steamers' Purchase Reserve		8,02,500
General Reserve : Balance on 1.4.2001	26,00,000	
<i>Less</i> : Debit Balance of Profit and Loss Account	<u>14,47,000</u>	11,53,000
Dividend Equalisation Reserve : Balance on 1.4.2001	21,00,000	
<i>Less</i> : Transfer Profit and Loss Account	<u>3,22,500</u>	17,77,500
		<u><u>37,33,000</u></u>

Schedule D : Fixed Assets

Assets	Cost					Depreciation					Net Book Value
	Cost upto 31.3.2001	Addition During 2001-2002	Cost of Assets sold or destroyed	Cost upto 31.3.2002	Depreciation upto 31.3.2001	On assets sold or destroyed upto 31.3.2001	During the year 2001-02	Upto 31.3.2002	Rs.		
Steamers	Rs. 1,31,00,000	Rs. 40,75,000	Rs. 35,00,000	Rs. 1,36,75,000	Rs. 37,00,000	Rs. 4,20,000	Rs. 8,20,500	Rs. 41,00,500	Rs. 95,74,500		
Furniture and Fittings	1,78,500	–	–	1,78,500	36,000	–	17,850	53,850	1,24,650		
	1,32,78,500	40,75,000	35,00,000	1,38,53,500	37,36,000	4,20,000	8,38,350	41,54,350	96,99,150		

Schedule C : Current Liabilities and Provisions

	Rs.	Rs.
<i>Current Liabilities :</i>		
Sundry Creditors (Less claim of Rs. 36,000 no longer required)	9,57,500	
Unclaimed Dividends	<u>89,250</u>	10,46,750
<i>Provisions :</i>		
Proposed Dividend		<u>4,87,500</u>
		<u>15,34,250</u>

Schedule E : Current Assets, Loans and Advances

	Rs.	Rs.
A. Current Assets :		
Accrued Dividends on Investments		22,500
Stock of Provisions, Stores, Coals etc.		3,58,000
Book Debts (Unsecured-assumed) :		
More than 6 months (assumed)	2,50,000	
Others (assumed)	14,09,000	
	<u>16,59,000</u>	
<i>Less : Provision for Bad Debts</i>	2,62,000	13,97,000
Debts Considered Good	13,71,500	
Debts Considered Doubtful	2,87,500	
	<u>16,59,000</u>	
Cash and Bank Balance :		8,60,850
B. Loans and Advances :		
Claim Due from Underwriters	17,50,000	26,38,350
Loans to Directors	75,000	
Prepaid Insurance	1,88,250	20,13,250
		<u>46,51,600</u>

9.7 ACCOUNTING PACKAGES

Since mid-seventies, there has been an incredible change in the way people work and do business. One of the most significant contributors to this change is the large scale acceptance of computers. Computers have also made place in the area of accounting. Nowadays, there are financial accounting softwares that are used to store and maintain daily business transactions like purchase, sales, receipts, payments, purchase returns, sales returns, deposits and withdrawals etc.

Tally

Tally is the number one financial accounting package in India and is also used abroad. With Tally you could be the owner, the financial controller, accountant, manager, auditor or anyone connected with accounts. Tally is a popular software because:

1. It is user friendly and can be used even by everyone giving you full control over every aspect of your business accounting.
2. No more wait for day-ends to have a quick look of the financial status of your Business/Firms. Tally provide instant results.
3. Do more memorisation of codes for accounts, Debtors and Creditors.
4. It is flexible and can be customised to suit your daily work schedules and needs like Customising Vouchers, Balance Sheets etc.
5. Highly secured against data tempering. Different labels of security designed with different privileges to access and use the data.
6. Help features to bail you out from any confusion.

Ex

Ex is a financial accounting software and is a product of Tata Consultancy Services. There are two products under Ex

- a) Ex Personal Accountant
 - b) Ex Next Generation
- a) **Ex Personal Accountant** : Ex Personal Accountant is a new re-engineered accounting software that helps keep track of every aspect of a business at a pick of mouse and keeps pace with changing business needs. It is a fully functional business accounting software. It is simple, easy to use, goes online in seconds and requires no support at all. It is designed to run on Windows 95/98/NT and above.

Features :

1. Ready templates for individuals, traders and manufacturers.
2. Fully support multi-company accounting.
3. Stock management - allows the user to generate Stock Statements and Stock Valuation Reports.
4. Generic document facility yet flexible enough to match various invoicing needs.
5. Do exhaustive reports designed in consultation with chartered accountants to meet statutory and business requirements.
6. Quick information retrieval of any customers/supplies.
7. Smart Finder – An easy to use tool for adhoc queries.
8. Data Export – Supports export of selected reports to MS Word and MS Excel- allows you to create your own report formats.

9. Full support for dot matrix printing apart from support for laserjet/deskjet through windows.

b) **Ex Next Generation :** Ex Next Generation is comprehensive business accounting software with document designer and extensive reporting capabilities perfect for medium sized businesses. For larger corporations with higher volume requirements, the robust, reliable and extendable accounting solution is - the Ex Next Generation 1.5 Multi User on SQL Server 7.0 TM.

Features :

1. Easy to use Graphical User Interface
2. Security at the individual activity level – Different passwords can be set for various activities.
3. Layout designing of various documents
4. Code-Less Accounting
5. Multi-Company Accounting
6. Smart Finder facility for Ledgers and other documents
7. Monitoring of receivables and payables
8. Stock valuation
 - Two methods are used i.e. Weighted Average method and Moving Weighted Average Method
9. Company accounts Consolidation Facility
10. OLE Automation Support
11. 32 bit Open Database Connectivity (ODBC)

9.8 SUMMARY

Final accounts, as we know, are prepared to show business profit over a period of time and to reveal the business position (financial) at a point of time. A company, like any other forms of business organisation, has also to prepare its final accounts every year. Preparation of final accounts is compulsory for a company. The Companies Act has made it obligatory for every limited company to prepare, present and publish its final accounts every year, in order to protect and safeguard the interest of the Owners. Section 209 and Section 210 deal with the provisions of preparation of final accounts for a company. Section 209 makes it compulsory for a company to keep certain books of account and Section 210 governs the preparation of the final accounts.

9.9 KEYWORDS

Revenue: Revenue is the monetary expression of the aggregate of products or services transferred by an enterprise to its customers during a period of time.

Profit and loss appropriation account: The account showing the disposal of profits is known as profit and loss appropriation account.

Dividend: Dividends may be defined as the share of profits that is payable to each shareholder of the company.

Deferred revenue expenditure: When a huge amount is spent on the expense and its effect is to last for a long time, it is called a deferred revenue expenditures.

9.10 SELF ASSESSMENT QUESTIONS

1. "Every Balance Sheet of Company shall give a true and fair view of the state of affairs of the company as at the end of the financial year and shall subject to the provision of Section 211 of the Companies Act, be in the form set out in Part I of Schedule VI....."

Amplify and give the form of Balance Sheet.

2. What are the various heads under which profits are usually appropriated by companies and for what reason?
3. The authorised capital of X Limited is Rs. 5,00,000 consisting of 2,000 6% preference shares of Rs. 100 each and 30,000 equity shares of Rs. 10 each. The following was the Trial Balance of X Limited as on 31.3.2000 :

TRIAL BALANCE

as on 31.3.2000

	Dr.	Cr.
	Rs.	Rs.
Investment in shares at cost	50,000	
Purchases	4,90,500	
Selling expenses	79,100	
Stock on 1.4.1999	1,45,200	
Salaries and wages	52,000	
Cash on hand	12,000	
Interim preference dividend for the half year to 30.9.99	6,000	
Discount on issue of Debentures	2,000	
Preliminary expenses	1,000	
Bills receivable	41,500	
Interest on Bank Overdraft	7,800	
Interest on Debentures upto 30.9.99	3,750	
Sundry Debtors and Creditors	50,100	87,850
Freehold property at cost	3,50,000	
Furniture at cost less Depreciation of Rs. 15,000	35,000	
6% Preference share capital		2,00,000
Equity share capital fully paid up		2,00,000
5% Mortgage Debentures secured on freehold properties		1,50,000
Income Tax paid in advance for 1999-2000	10,000	
Dividends		4,250

Profit and Loss A/c (1.4.1999)		28,500
Sales (Net)		6,70,350
Bank Overdraft secured by hypothecation of stocks and receivables		1,50,000
Technical know-how fees at cost paid during the year	1,50,000	
Audit fees	5,000	
	<u>14,90,950</u>	<u>14,90,950</u>

You are required to prepare the Profit and Loss Account for the year ended 31.3.2000 and the Balance Sheet as on that date after taking into account the following :

- (a) Closing stock was valued at Rs. 1,42,500
- (b) Purchases include Rs. 5,000 worth of goods and articles distributed among valued customers.
- (c) Salaries and wages include Rs. 2,000 being wages incurred for installation of electrical fittings which were recorded under "Furniture".
- (d) Bills receivable include Rs. 1,500 being dishonoured bills, 50% of which had been consider irrecoverable.
- (e) Bills receivable of Rs. 2,000 maturing after 31.3.2000 were discounted.
- (f) Depreciation on furniture is to be charged at 10% on written down value.
- (g) Rs. 1,000 of Discount on issue of Debentures to be written off.
- (h) Interest on debentures for the half year ending on 31.3.2000 was due on that date.
- (i) Provide provision for taxation Rs. 4,000.
- (j) Technical know how fees is to be written off over a period of 10 years. Rs. 500 of preliminary expenses to be written off.
- (k) Salaries and wages include Rs. 10,000 being the Directors' remuneration.
- (l) Sundry Debtors include Rs. 6,000 debts due for more than six months.

Subject : Accounting for Managers
Course Code : CP-104
Lesson : 10

Updated by: Dr. M.C. Garg

COST ACCOUNTING : Nature and Scope

STRUCTURE

- 10.0 Objective
- 10.1 Introduction
- 10.2 Meaning and Nature of Cost Accountancy
- 10.3 Scope of Costing
- 10.4 Cost Accounting Vs Financial Accounting
- 10.5 Cost Accounting Vs. Management Accounting
- 10.6 Usefulness of Cost Accounting to Managers
- 10.7 Methods of Costing
- 10.8 Techniques of Costing
- 10.9 Concept of Cost
- 10.10 Cost Centre and Cost Unit
- 10.11 Cost Concepts
- 10.12 Classification of Cost
- 10.13 Components of Total Cost
- 10.14 Cost Sheet
- 10.15 Summary
- 10.16 Keywords
- 10.17 Self Assessment Questions
- 10.18 Suggested Readings

10.0 OBJECTIVE

After reading this lesson students must be able

- (i) to understand meaning, nature, scope and usefulness of costing accountancy
- (ii) to differentiate and classify the various cost concepts and
- (iii) to prepare cost sheets

10.1 INTRODUCTION

In the modern business world, the nature and functioning of business organizations have become very complicated. They have to serve the needs of variety of parties who are interested in the functioning of the business. These

parties constitute the owners, creditors, employees, government agencies, tax authorities, prospective investors, and last but not the least the management of the business. The business has to serve the needs of these different category of people by way of supplying various information from time to time. In order to satisfy the needs of all these group of people a sound organization of accounting system is very essential. In the ancient days the information required by those who were interested with a business organization was met by practising a system of accounting known as financial accounting system. Financial accounting is mainly concerned with preparation of two important statements, viz., income statement (or profit and loss account) and positional statement (or Balance sheet). This information served the needs of all those who are not directly associated with management of business. Thus financial accounts are concerned with external reporting as it provides information to external authorities. But management of every business organization is interested to know much more than the usual information supplied to outsiders. In order to carry out its functions of planning, decision-making and control, it requires additional cost data. The financial accounts to some extent fails to provide required cost data to management and hence a new system of accounting which could provide internal report to management was conceived of.

10.2 MEANING AND NATURE OF COST ACCOUNTANCY

Cost accountancy is a wide term. It means and includes the principles, conventions, techniques and systems which are employed in a business to plan and control the utilization of its resources. It is defined as "the application of costing and cost accounting principles, methods and techniques to the science, art and practice of cost control and the ascertainment of profitability. It includes the presentation of information derived therefrom for the purposes of managerial decision making"—C.I.M.A. London.

Cost accountancy is thus the science, art and practice of a cost accountant. It is a science in the sense that it is a body of systematic knowledge which a cost accountant should possess for the proper discharge of his duties and responsibilities. It is an art as it requires the ability and skill on the part of a cost accountant in applying the principles of cost accountancy to various managerial problems like price fixation, cost control, etc. Practice refers to constant efforts on the part of cost accountant in the field of cost accountancy. The theoretical knowledge alone would not enable a cost accountant, to deal with the intricacies, he should have sufficient practical training.

Cost accountancy includes several subjects. These are costing, cost accounting, cost control and cost audit. These are described below :

Costing : Costing refers to the process of cost finding. It is defined as "the technique and process of ascertaining costs". It has also been defined as "the classifying, recording and appropriate allocation of expenditure for the determination of costs, the relation of these costs to sales value and the ascertainment of profitability. Thus costing consists of principles and rules which are used for determining : (a) the cost of manufacturing a product like chemical, television, etc. and (b) the cost of providing a service, i.e., electricity, transport, etc.

Cost Accounting : Cost accounting is a system by means of which costs of products or services are ascertained and controlled. It is defined as "the application of accounting and costing principles, methods and techniques in the ascertainment of costs and the analysis of savings and/or excesses as compared with previous experience or with standards".

Thus, whereas costing is simply cost finding, which can be carried out by means of memorandum statements, arithmetic process etc., cost accounting denotes the formal accounting mechanism by means of which costs are ascertained. In simple words, costing means finding out the cost of something, and cost accounting means costing using double entry book keeping methods as a basis for ascertainment of costs. However, cost accounting and costing are often used interchangeably.

Cost Control : Cost control is the function of keeping costs within prescribed limits. In other words, cost control is compelling actual costs to conform to planned costs. Amongst the various techniques used for cost control, the two most popular are budgetary control and standard costing. These will be discussed in detail in lessons 13 and 14 respectively.

Cost Audit : Cost audit is the specific application of auditing principles and procedures in the fields of cost accounting. It is defined as the verification of cost accounts and a check on the adherence to the cost accounting plan. It has thus two functions - (a) to verify that the cost accounts have been correctly maintained and compiled, and (b) to check that principles laid down have been properly followed.

10.3 SCOPE OF COSTING

Cost accounting is not applicable only to manufacturing concerns. Its applications are in fact much wider. All types of activities, manufacturing and non-manufacturing, in which monetary value is involved, should consider the use of cost accounting. Wholesale and retail businesses, banking and insurance companies, railways, airways, shipping and road transport companies, hotels, hospitals, schools, colleges and universities, all may employ cost accounting

techniques to operate efficiently. It is only a matter of recognition by the management of the applicability of these concepts and techniques in their own fields of endeavour.

10.4 COST ACCOUNTING VS. FINANCIAL ACCOUNTING

Financial accounting, as pointed out previously, is concerned with recording, classifying and summarizing financial transactions pertaining to an accounting period. The basic objective is to provide a commentary to the shareholders and outside parties on the financial status of an enterprise in the form of a profit and loss account and balance sheet. The profit or loss of business operations is revealed through these statements year after year, observing the statutory requirements of the Companies Act, 1956.

Cost accounting, on the other hand, aims at providing prompt cost data for managerial planning, controlling and decision making. It offers a complete explanation as to how the scarce inputs are put to use in business. The sources of efficiency or inefficiency are revealed through periodic reports. The profit or loss relating to each job, department or product can also be found out easily. The following table 10.1 tries to draw the curtain between financial accounting and cost accounting :

Basis of distinction	Financial Accounting	Cost Accounting
Statutory Requirements	These accounts have to be prepared according to the legal requirements of Companies Act and Income Tax Act	Maintenance of these accounts is voluntary except in certain industries where it has been made obligatory to keep records under the Companies Act.
Purpose	The main purpose of financial accounting is to prepare profit and loss account and balance sheet for reporting to owners and outside agencies i.e., external users	The main purpose of cost accounting is to provide detailed cost information to management i.e., internal users.
Analysis of cost and Profit	Financial accounts reveal the profit or loss of the business as a whole during a particular period. It does not show the figures of cost and profit for individual products, departments and processes, etc.	Cost accounts show the detailed cost and profit data for each product line, department, process etc.
Periodicity of Reporting	Profit and Loss Account and Balance Sheet are prepared periodically, usually on an annual basis.	Cost reporting is a continuous process and may be daily, weekly, monthly, etc.

Control aspect	It keeps records of financial transactions and does not attach any importance to control aspect.	It is used as a detailed system of controls. It takes the help of certain special techniques like standard costing and budgetary control.
Nature	It is concerned with historical records. The historical nature of financial accounting can be easily understood in the context of the purposes for which it was designed.	Cost accounting does not end with what has happened in the past. It extends to plans and policies to improve performance in the future.
Nature of statements prepared	General purpose statements like Profit and Loss Account and Balance Sheet are prepared by it.	It generates special purpose statements and reports like Report of Loss of Materials,
Report	That is to say that financial accounting must produce information that is used by many classes of people none of whom have explicitly defined information needs.	Idle Times Report, Variance Report etc. Cost accounting identifies the user, discusses his problems and needs and provides tailored information.
Classification of Records	Financial accounting classifies records and analyses transactions in subjective manner i.e. according to nature of expenditure.	Cost accounting records and classifies expenditure according to the purpose for which cost is incurred.

10.5 COST ACCOUNTING Vs MANAGEMENT ACCOUNTING

Cost accounting and management accounting are both internal to an organisation. Both have, more or less, the same objective of assisting management in its planning, decision making etc. It is not worthwhile to distinguish the two inter-related disciplines as two branches of accounting. Consider what experts opine in this regard.

Dobson : Management accounting is so broad and comprehensive that it includes both financial and cost accounting.

C.T. Horngren : Cost accounting is management accounting plus a small part of financial accounting.

It is because of the overlapping nature of the two in many areas, that everyone talks of cost and management accounting as a single discipline. However, some distinctions can be drawn thus :

Table 10.2: Distinction between Cost Accounting and Management Accounting

Point of distinction	Cost accounting	Management accounting
Coverage	It deals with ascertainment, allocation, distribution and accounting aspects of costs	It is concerned with the impact and effect aspects of costs.
Position in the hierarchy	Cost accountant is generally placed at a lower level of hierarchy than a management accountant.	Management accountant assumes a superior level in the management hierarchy.
Approach	Narrow, as the focus is primarily on cost data	Wider, as one may have to use certain economic and statistical data along with costing data to assist managerial decision making.
Emphasis	It lays emphasis on cost ascertainment and cost control.	It is used as a decision making technique.
Scope	The scope of cost accounting is limited to important techniques like variable costing, break-even analysis and standard costing.	It Makes use of other techniques like funds flow, ratio analysis, cash flow etc. in addition to variable costing, break-even analysis and standard costing. This includes financial accounting, tax planning and tax accounting.
Focus	It focuses on short term planning. Sophisticated tools not employed for forecasting purposes.	It focuses on short range and long range planning and uses sophisticated technique in the planning and control process.
Orientation	It deals with data supplied by financial accounting, orientation is not futuristic.	Futuristic in orientation, is more predictive in nature than cost accounting.

Evolution	The evolution of cost accounting is mainly due to the limitations of financial accounting.	It draws heavily on cost data and other information derived from cost accounting It is merely an extension of the managerial aspects of
cost accounting.		
Purpose	Its main purpose is to report current and prospective costs of product, service, department, job or process	Its main objective is to provide all accounting information relevant for use in formulation of policies, planning, controlling, decision making etc. to ensure maximum profits.

10.6 USEFULNESS OF COST ACCOUNTING TO MANAGERS

The shortcomings inherent in financial accounting have made the management to realise the importance of cost accounting. Whatever may be the type of business, it involves expenditure on labour, materials and other items required for manufacturing and disposing of the product. Moreover, big business requires delegation of responsibility, division of labour and specialisation. Management has to avoid the possibility of waste at each stage. Management has to ensure that no machine remains idle, efficient labour gets due initiative, proper utilisation of by-products is made and costs are properly ascertained. Besides management, creditors and employees are also benefited in numerous ways by installation of a good costing system in an industrial organisation. Cost accounting increases the overall productivity of an industrial establishment and, therefore, serves as an important tool in bringing prosperity to the nation. The various advantages derived by managements on account of a good costing system can be put as follows :

1. **Useful in periods of depression and competition:** During trade depression the business cannot afford to have leakages which pass unchecked. The management should know where economies may be sought, waste eliminated and efficiency increased. The business has to wage a war for its survival. The management should know the actual cost of their products before embarking on any scheme of reducing the prices or giving tenders. Costing system facilitates this.
2. **Helps in pricing decisions :** Though economic law of supply and demand and activities of the competitors, to a great extent, determine the price

of the article, cost to the producer does play an important part. The producer can take necessary guidance from his costing records.

3. **Helps in estimates :** Adequate costing records provide a reliable basis upon which tenders and estimates may be prepared. The chances of losing a contract on account of over-rating or the loss in the execution of a contract due to under-rating can be minimised. Thus, "ascertained costs provide a measure for estimates, a guide to policy, and a control over current production.

4. **Cost Accounting helps in channelising production on right lines :** Costing makes possible for the management to distinguish between profitable and non-profitable activities. Profits can be maximised by concentrating on profitable operations and eliminating non-profitable ones.

5. **Helps in reducing wastage :** As it is possible to know the cost of the article at every stage, it becomes possible to check various forms of waste, such as of time, expense etc., or in the use of machinery, equipment and tools.

6. **Costing makes comparison possible :** If the costing records are regularly kept, comparative cost data for different periods and various volumes of production will be available. It will help the management in forming future lines of action.

7. **Provides data for periodical profit and loss accounts :** Adequate costing records supply to the management such data as may be necessary for preparation of profit and loss account and balance sheet, at such intervals as may be desired by the management. It also explains in detail the sources of profit or loss revealed by the financial accounts, thus helps in presentation of better information before the management.

8. **Costing results into increased efficiency :** Losses due to wastage of materials, idle time of workers, poor supervision etc. will be disclosed if the various operations involved in manufacturing a product are studied by a cost accountant. The efficiency can be measured and costs controlled and through it various devices can be framed to increase the efficiency.

9. **Costing helps in inventory control and cost reduction :** Costing furnishes control which management requires in respect of stock of materials, work-in-progress and finished goods. Costs can be reduced in the long-run when alternates are tried. This is particularly important in the present-day content of global competition. Cost accounting has assumed special significance beyond cost control this way.

10. **Helps in increasing productivity** : Productivity of material and labour is required to be increased to have growth and more profitability in the organisation. Costing renders great assistance in measuring productivity and suggest ways to improve it.

10.7 METHODS OF COSTING

The basic principles of ascertaining costs are the same in every system of cost accounting. However, the methods of analysing and presenting the cost may vary from industry to industry. The method to be used in collecting and presenting costs will depend upon the nature of production. Basically there are two methods of costing, namely. Job costing and Process costing.

Job costing : Job costing is used where production is not repetitive and is done against orders. The work is usually carried out within the factory. Each job is treated as a distinct unit, and related costs are recorded separately. This type of costing is suitable to printers, machine tool manufacturers, job foundries, furniture manufactures etc. The following methods are commonly associated with job costing :

Batch costing : Where the cost of a group of product is ascertained, it is called 'batch costing'. In this case a batch of similar products is treated as a job. Costs are collected according to batch order number and the total cost is divided by the numbers in a batch to find the unit cost of each product. Batch costing is generally followed in general engineering factories which produce components in convenient batches, biscuit factories, bakeries and pharmaceutical industries.

Contract costing : A contract is a big job and, hence, takes a longer time to complete. For each individual contract, account is kept to record related expenses in a separate manner. It is usually followed by concerns involved in construction work e.g. building roads, bridge and buildings etc.

Process Costing : Where an article has to undergo distinct processes before completion, it is often desirable to find out the cost of that article at each process. A separate account for each process is opened and all expenses are charged thereon. The cost of the product at each stage is, thus, accounted for. The output of one process becomes the input to the next process. Hence, the process cost per unit in different processes is added to find out the total cost per unit at the end. Process costing is often found in such industries as chemicals, oil, textiles, plastics, paints, rubber, food processors, flour, glass, cement, mining and meat packing. The following methods are used in process costing :

Output/Unit Costing : This method is followed by concerns producing a single article or a few articles which are identical and capable of being expressed in simple, quantitative units. This is used in industries like mines, quarries, oil drilling, cement works, breweries, brick works etc. for example, a tonne of coal in collieries, one thousand bricks in brick works etc. The object here is to find out the cost per unit of output and the cost of each item of such cost. A cost sheet is prepared for a definite period. The cost per unit is calculated by dividing the total expenditure incurred during a given period by the number of units produced during the same period.

Operating Costing : This method is applicable where services are rendered rather than goods produced. The procedure is same as in the case of unit costing. The total expenses of the operation are divided by the units and cost per unit of service is arrived at. This is followed in transport undertakings, municipalities, hospitals, hotels etc.

Multiple Costing : Some products are so complex that no single system of costing is applicable. Where a concern manufactures a number of components to be assembled into a complete article, no one method would be suitable, as each component differs from the other in respect of materials and the manufacturing process. In such cases, it is necessary to find out the cost of each component and also the final product by combining the various methods discussed above. This type of costing is followed to cost such products as radios, aeroplanes, cycles, watches, machine tools, refrigerators, electric motors etc.

Operating Costing : In this method each operation at each stage of production or process is separately identified and costed. The procedure is somewhat similar to the one followed in process costing. Process costing involves the costing of large areas of activity whereas operation costing is confined to every minute operation of each process. This method is followed in industries with a continuous flow of work, producing articles of a standard nature, and which pass through several distinct operations in a sequence to completion. Since this method provides for a minute analysis of cost, it ensures greater accuracy and better control of costs. The costs of each operation per unit and cost per unit upto each stage of operation can be calculated quite easily. This method is in force in industries where toys, leather and engineering goods are manufactured.

Departmental Costing : When costs are ascertained department by department, such a method is called 'departmental costing'. Where the factory is divided into a number of departments, this method is followed. The total

cost of each department is ascertained and divided by the total units produced in that department in order to obtain the cost per unit. This method is followed by departmental stores, publishing houses etc.

10.8 TECHNIQUES OF COSTING

In addition to the different costing methods, various techniques are also used to find the costs. These techniques may be grouped under the following heads:

Historical Absorption Costing : It is the ascertainment of costs after they have been incurred. It is defined as the practice of charging all costs, both variable and fixed, to operations, process or products. It is also known as traditional costing. Since costs are ascertained after they have been incurred, it does not help in exercising control over costs. However, It is useful in submitting tenders, preparing job estimates etc.

Marginal Costing : It refers to the ascertainment of costs by differentiating between fixed costs and variable costs. In this technique fixed costs are not treated as product costs. They are recovered from the contribution (the difference between sales and variable cost of sales). The marginal or variable cost of sales includes direct material, direct wages, direct expenses and variable overhead. This technique helps management in taking important policy decisions such as product pricing in times of competition, whether to make or not, selection of product mix etc.

Differential Costing : Differential cost is the difference in total cost between alternatives evaluated to assist decision making. This technique draws the curtain between variable costs and fixed costs. It takes into consideration fixed costs also (unlike marginal costing) for decision making under certain circumstances. This technique considers all the revenue and cost differences amongst the alternative courses of action to assist management in arriving at an appropriate decision.

Standard Costing : It refers to the ascertainment and use of standard costs and the measurement and analysis of variances. Standard cost is a predetermined cost which is computed in advance of production on the basis of a specification of all factors affecting costs. The standards are fixed for each element of cost. To find out variances, the standard costs are compared with actual costs. The variances are investigated later on and wherever necessary, rectificational steps are initiated promptly. The technique helps in measuring the efficiency of operations from time to time.

Practical Difficulties in Installing Costing System : Apart from technical costing problems, a cost accountant is confronted with certain practical

difficulties in installing a costing system. These are :

1. **Lack of support of management :** In order to make the costing system a success, it must have the whole-hearted support of every member of the management. Many a time, the costing system is introduced at the behest of the Managing Director or the Financial Director without the support of functional managers. They view the system as an interference in their work and do not make use of the system.

Before the system is installed, the cost accountant should ensure that the management is fully committed to the costing system. A sense of cost consciousness should be created in their minds by explaining them that the system is for their benefit. A cost manual should be prepared and distributed to them giving the details and functions of the system.

2. **Resistance from the accounting staff :** The existing accounting staff may not welcome the new system. This may be because they look with suspicion at a system which is not known to them. The co-operation of the employees should be sought by convincing them that the system is needed to supplement the financial accounting system and that it is for the betterment of all.

3. **Noncooperation of Working and Supervisory Staff :** Correct activity data which is supplied by supervisory staff and workers is necessary for a costing system. They may not co-operate and resist the additional paper work arising as a result of the introduction of the system. Such resistance generally arises out of ignorance. Proper education should be given to the staff regarding benefits of the system and the important roles they have to play to make it successful.

4. **Shortage of Trained Staff :** In the initial stages, there may be shortage of trained costing staff. The staff should be properly trained so that costing department can run efficiently.

10.9 CONCEPT OF COST

The scope of term 'cost' is extremely broad and general. It is therefore, not easy to define or explain this term without leaving any doubt concerning its meaning. Cost accountants, economists and others develop the concept of cost according to their needs. This concept should, therefore, be studied in relation to its purpose and use. Some of the definitions of 'cost' are reproduced below:

Cost is "the amount of expenditure (actual or notional) incurred on or attributable to a given thing". (C.I.M.A. London). Cost is "an exchange price, a

foregoing, a sacrifice made to secure benefit". (A tentative set of Broad Accounting Principles for Business Enterprises).

Cost should be distinguished from expenses and losses though in practice the terms cost and expenses are sometimes used synonymously. An expense is defined as including "all expired costs which are deductible from revenue". When a portion of the service potential of an asset is consumed, that portion of its cost is re-classified as an expense.

10.10 COST CENTRE AND COST UNIT

Cost is ascertained by cost centres or cost units or by both. The terms are discussed below :

Cost Centre : A cost centre is "a location, person, or item of equipment or group of these for which costs may be ascertained and used for the purpose of control". Thus, a cost centre refers to a section of the business to which costs can be charged. It may be a location (a department, a sales area), an item of equipment (a machine, a delivery van), a person (a salesman, a machine operator) or a group of these (two automatic machines operated by one workman).

A cost centre is primarily of two types :

- (a) Personal cost centre—which consists of a person or a group of persons.
- (b) Impersonal cost centre— which consists of a location or an item of equipment or group of these.

From functional point of view, cost centres may be of the following two types:

- (a) Production cost centre—those cost centres where actual production work takes place. Examples are melting shop, machine shop, welding shop, finishing shop, etc.
- (b) Service cost centre— those cost centres which are ancillary to and render services to production cost centres. Examples of service cost centres are power house, tool room, stores department, repair shop, canteen, etc. Cost incurred in service cost centres are of indirect type.

Cost accountant sets up cost centres to enable him to ascertain the costs the needs to know. A cost centre is charged with all the costs that relate to it, eg.. if a cost centre is a machine, it will be charged with the costs of power, light, depreciation and its share of rent etc. The purpose of ascertaining the cost of a cost centre is cost control. The person incharge of a cost centre is held responsible for the control of cost of that centre.

The number of cost centres and the size of each vary from one undertaking to another. It all depends upon the expenditure involved and requirements of the management of the purpose of cost control. A large number of cost centres tend to be expensive but having too few cost centres defeat the very purpose of control.

Cost Unit : It has been seen above that cost centres help in ascertaining the costs by location, equipment or person. Cost unit is a step further which breaks up the cost into smaller sub-divisions and helps in ascertaining the cost of saleable products or services.

A cost unit is a "unit of product, service or time in relation to which cost may be ascertained or expressed", (C.I.M.A. London). Cost units are the 'things' that the business is set up to provide of which cost is ascertained. For example, in a sugar mill, the cost per tonne of sugar may be ascertained, in a textile mill the cost per-metre of cloth may be ascertained. Thus a tonne of sugar and 'metre' of cloth are cost units. In short, cost unit is unit of measurement of cost.

All sorts of cost units are adopted, the criterion for adoption being the applicability of particular cost unit to the circumstances under consideration. Broadly, cost unit may be :

- (i) **Units of production**, e.g. a metre of cloth, a ream of paper, a tonne of steel, a metre of cable, etc. or
- (ii) **Units of service** , e.g. passenger miles, cinema seats, consulting hours etc.

A few more examples of cost units in various Industries are given below :

Industry	Cost Unit
Bricks	1000 bricks
Cement	Tonne
Chemicals	Tonne, kilogram, litre, gallon, etc.
Carpets	Square foot
Pencils	Dozen or gross
Electricity	Kilowatt hour (KWH)
Transport	Passenger kilometer or tonne kilometre
Printing Press	Thousand copies
Cotton or jute	Bale
Timber	Cubic foot
Mines	Tonne
Hotel	Room per day
Shoes	Pair or dozen pairs

Note : The cost units and cost centres should be those which are readily understood and accepted by all concerned.

10.11 COST CONCEPTS

The clear understanding of various cost concepts is essential for the study of cost accounting and cost systems. Description of these concepts follows now.

Product and period costs - The product cost is aggregate of costs that are associated with a unit of product. Such costs may or may not include an element of overheads depending upon the type of costing system in force- absorption or direct. Product costs are related to goods produced or purchased for resale and are initially identifiable as part of inventory. These product or inventory costs become expenses in the form of cost of goods sold only when the inventory is sold. Product cost is associated with unit of output. The costs of inputs in forming the product viz., the direct material, direct labour, factory overhead constitute the product costs.

The period cost is a cost that tends to be unaffected by changes in level of activity during a given period of time. Period cost is associated with a time period rather than manufacturing activity and these costs are deducted as expenses during the current period without having been previously classified as product costs. Selling and distribution costs are period costs and are deducted from the revenue without their being regarded as part of the inventory cost.

Common and joint costs : The common cost is an indirect cost that is incurred for the general benefit of a number of departments or for the whole enterprise and which is necessary for present and future operations. The joint costs are the cost of either a single process or a series of processes that simultaneously produce two or more products of significant relative sales value.

Short-run and long-run costs : The short-run costs are costs that vary with output when fixed plant and capital equipment remain the same and become relevant when a firm has to decide whether or not to produce more in the immediate future. The long-run-costs are those which vary with output when all input factors including plant and equipment vary and become relevant when the firm has to decide whether to set up a new plant or to expand the existing one.

Past and future cost : The past costs are actual costs incurred in the past and are generally contained in the financial accounts. These costs report past events and the time lag between event and its reporting makes the information out of

date and irrelevant for decision-making. These costs will just act as a guide for future course of action.

The future costs are costs expected to be incurred at a later date and are the only costs that matter for managerial decisions because they are subject to management control. Future costs are relevant for managerial decision making in cost control, profit projections, appraisal of capital expenditure, introduction of new products, expansion programmes and pricing etc.

Controllable and non-controllable costs :The concept of responsibility accounting leads directly to the classification of costs as controllable or uncontrollable. The controllable cost is a cost chargeable to a budget or cost centre, which can be influenced by the actions of the person in whom control the centre is vested. It is always not possible to predetermine responsibility, because the reason for deviation from expected performance may only become evident later. For example excessive scrap may arise from inadequate supervision or from latent defect in purchased material. The controllable cost is a cost that can be influenced and regulated during a given time span by the actions of a particular individual within an organisation.

The controllability of cost depends upon the level of responsibility under consideration. Direct costs are generally controllable by the shop level management. The uncontrollable cost is a cost that is beyond the control (i.e. uninfluenced by actions) of a given individual during a given period of time.

The distinction between controllable and uncontrollable costs are not very sharp and may be left to individual judgement. Some expenditure which may be uncontrollable on the short-term basis can be controllable on long-term basis, There are certain costs which are really difficult to control due to the following reasons.

- * Physical hazards arising due to flood, fire, strike, lockout etc.
- * Economic risks such as increased competition, change in fashion or model, higher prices of inputs, import restrictions, etc.
- * Political risk like change in Government policy, political unrests, war etc.
- * Technological risk such as change in design, know-how etc.

Replacement and Historical Costs : The Replacement costs and Historical costs are two methods for carrying assets in the balance sheet and establishing the amounts of costs that are used to determine income.

The *Replacement cost* is a cost at which material identical to that is to be replaced could be purchased at the date of valuation (as distinct from actual cost price at the date of purchase). The replacement cost is a cost of replacing an asset at any given point of time either at present or the future (excluding any element attributable to improvement).

The *Historical cost* is the actual cost, determined after the event. Historical cost valuation states costs of plant and materials, for example, at the price originally paid for them whereas replacement cost valuation states the costs at prices that would have to be paid currently. Costs reported by conventional financial accounts are based on historical valuations. But during periods of changing price level, historical costs may not be correct basis for projecting future costs. Naturally historical costs must be adjusted to reflect current or future price levels.

Out of pocket and Book Costs : The out of *pocket cost* is a cost that will necessitate a corresponding outflow of cash. The costs involving cash outlay or payment to other parties are termed as out of pocket costs. Book costs are those which do not require current cash payments. Depreciation, is a notional cost in which no cash transaction is involved. The distinction between out of pocket costs and book costs primarily shows how costs affect the cash position. Out of pocket costs are relevant in some decision making problems such as fluctuation of prices during recession, make or buy decisions etc. Book costs can be converted into out of pocket costs by selling the assets and having item on hire. Rent would then replace depreciation and interest.

Imputed and Sunk Costs : The *imputed cost* is a cost which does not involve actual cash outlay, which are used only for the purpose of decision making and performance evaluation. Imputed cost is a hypothetical cost from the point of view of financial accounting. Interest on capital is common type of imputed cost. No actual payment of interest is made but the basic concept is that, had the funds been invested elsewhere they would have earned interest.

Thus, imputed costs are a type of opportunity costs.

The Sunk costs are those costs that have been invested in a project and which will not be recovered if the project is terminated. The sunk cost is one for which the expenditure has taken place in the past. This cost is not affected by a particular decision under consideration. Sunk costs are always results of decisions taken in the past. This cost cannot be changed by any decision in future. Investment in plant and machinery as soon as it is installed its cost is sunk cost and is not relevant for decisions. Amortization of past expenses e.g. depreciation is sunk cost. Sunk costs will remain the same irrespective of the

alternative selected. Thus, it need not be considered by the management in evaluating the alternatives as it is common to all of them. It is important to observe that an unavoidable cost may not be a sunk cost. The Managing Director's salary is generally unavoidable and also out of pocket but not sunk cost.

Relevant and Irrelevant Costs : The *relevant cost* is a cost appropriate in aiding to make specific management decisions. Business decisions involve planning for future and consideration of several alternative courses of action. In this process the costs which are affected by the decisions are future costs. Such costs are called relevant costs because they are pertinent to the decisions in hand. The cost is said to be relevant if it helps the manager in taking a right decision in furtherance of the company's objectives.

Opportunity and Incremental Costs : The *opportunity cost* is the value of a benefit sacrificed in favour of an alternative course of action. It is the maximum amount that could be obtained at any given point of time if a resource was sold or put to the most valuable alternative use that would be practicable. The opportunity cost of a good or service is measured in terms of revenue which could have been earned by employing that good or service in some other alternative uses. Opportunity cost can be defined as the revenue forgone by not making the best alternative use. Opportunity cost is the prospective change in cost following the adoption of an alternative machine process, raw materials etc. It is the cost of opportunity lost by diversion of an input factor from use to another.

The *Incremental cost* is the extra cost of taking one course of action rather than another. It is also called as different cost. The incremental cost is the additional cost due to a change in the level of nature of business activity. The change may take several forms e.g., changing the channel of distribution, adding a new machine, replacing a machine by a better machine, execution of export order etc. Incremental costs will be different in case of different alternatives. Hence, incremental costs are relevant to the management in the analysis for decision making.

Marginal cost : The *marginal cost* is the variable cost of one unit of a product or a service i.e., a cost which would be avoided if the unit was not produced or provided. In this context a unit is usually either a single article or a standard measure such as litre or kilogram, but may in certain circumstances be an operation, process or part of an organisation. The marginal cost is the amount at any given volume of output by which aggregate costs are changed if the volume of output is increased or decreased by one unit. The marginal costing

technique is the process of ascertaining marginal costs and of the effects of changes in volume of type of output on profit by differentiating between fixed and variable costs.

Notional cost : The *notional cost* is a hypothetical cost taken into account in a particular situation to represent the benefit enjoyed by an entity in respect of which no actual expense is incurred.

10.12 CLASSIFICATION OF COST

The process of grouping costs according to their common characteristics is called classification of cost. It is a systematic placement of like items together according to their common features. The followings are the important ways of classifying costs.

A) Classification According to Functions : This is a traditional classification. A business has to perform a number of functions like manufacturing, administration, selling, distribution and research. Cost may have to be ascertained for each of these functions. On this basis, costs are classified into the following groups :

(i) **Manufacturing cost** : This is the cost of the sequence of operations which begins with supplying materials, labour and services and ends with completion of production.

(ii) **Administration cost** : This is general administrative cost and includes all expenditure incurred in formulating the policy, directing the organisation and controlling the operations of an undertaking, which is not directly related to production, selling and distribution, research and development activity or function.

(iii) **Selling and distribution costs** : Selling cost is the cost of seeking to create and simulating demand and of securing orders.

Distribution cost is the cost of sequence of operations which begins with making the packed product available for despatch and ends with making the reconditioned returned empty package for re-use. The various items included in manufacturing administrative, selling and distribution costs are available in Table 10.3

Table 10.3
Functional Classification of Costs

Manufacturing Costs	Selling Costs
Materials	Advertising
Labour	Salaries & Commissions of salesmen
Factory rent	Showroom expenses
Depreciation	Samples
Power & lighting	Travel expenses
Insurance	Distribution Costs
Stores Keeping	Packing costs
Administration Costs	Carriage outward
Accounts office expenses	Warehousing costs
Audit fees	Upkeep and running costs of delivery vans
Legal expenses	
Office rent	
Director's remuneration	
Postage	

(iv) **Research and development cost** : Research cost is the cost of searching new or improved products or methods. It comprises wages and salaries of research staff, payments to outside research organisations, materials used in laboratories and research departments, etc.

After completion of research, the management may decide to produce a new improved product or to employ a new or improved method. Development cost is the cost of the process which begins with the implementation of the decision to produce a new product or to employ a new or improved method and ends with the commencement of formal production of that product or by that method.

Pre-production cost is that part of the development cost which is incurred in making in trial production run preliminary to formal production.

B) Classification based on cost behaviour : Depending on the variability behaviour costs can be classified into variable and fixed costs.

(a) **Variable cost** : The variable cost is a cost that tends to vary in accordance with level of activity within the relevant range and within a given period of time. The Prime product costs i.e., direct material, direct labour and direct expenses tend to vary in direct proportion to the level of activity. An increase in the volume means a proportionate increase in the total variable costs and a decrease in volume will lead to a proportionate decline in the total variable

costs. There is a linear relationship between volume and variable costs. They are constant per unit.

Variable costs have an explicit physical relationship with a selected measure of activity and exists an optimum cause and effect relationship between the input and output. Therefore variable costs are also known as engineered costs. All variable costs are not engineered costs. Some of the variable components which are termed as discretionary variable costs and such costs will vary with fluctuations in the levels of activity merely because of the policy of the management. The variable element of research and development or advertisement costs, which are discretionary by nature may increase with increased activity and management may decide to spend more in periods of increased activity.

(b) **Fixed cost** : The fixed cost is a cost that tends to be unaffected by changes in the level of activity during a given period of time. The fixed costs remain constant in the total regardless of changes in volume upto a certain level of output. They are not affected by changes in the volume of production. There is an inverse relationship between volume and fixed cost per unit. Fixed costs tend to remain constant for all levels of activity within a certain range. It follows that some fixed costs will continue to be incurred even when the activity comes down to nil. Some fixed costs are liable to change from one period to another. For example salaries bill may go up because of annual increments or due to change in the pay rates and due to pay structure.

(c) **Semi-variable cost or semi-fixed cost** : Many costs fall between these two extremes. They are called as semi-variable cost or semi-fixed costs. They are neither perfectly variable nor absolutely fixed in relation to changes in volume. They change in the same direction as volume but not in direct proportion thereto. An example is found in telephone charges. The rental element is a fixed cost whereas charges for call made are a variable cost. The distinction between fixed and variable cost is important in forecasting the effect of short-run changes in volume upon costs and profits. This distinction has also given rise to the concepts of Marginal Costing, Direct Costing, Flexible Budgeting. Costs which have neither a linear or curvilinear relationship with output but they move in steps with fluctuations in activity levels. These are called stepped up costs. Basically these are fixed costs upto a certain level of activity specified but they change as soon as a new range is reached. Such costs are semi variable in the long-term but fixed in the short-term. Certain variable costs tend to vary during specific periods for reasons not related to fluctuations in activity level. For example, increased maintenance cost during periods of low production, increased costs on air-conditioning in summer. Costs which

fluctuate with volume of production but after certain stage of production has reached the fluctuations in cost is disproportionate. It changes either at a retarded or accelerated rate.

C) Committed and Discretionary costs : It is shown above that costs may be classified into fixed and variable. Fixed costs may be further classified as committed costs and discretionary (or programmed) costs. This classification is based on the degree to which firm is locked into the asset or service that is generating the fixed cost.

Fixed cost is committed if it is incurred in maintaining physical facilities and management set up. Committed costs cannot be avoided in the short run. For example, salary of the managing director may represent a committed cost if, by policy, the managing director is not to be released unless the firm is liquidated. Similarly, depreciation of plant and equipment is committed because these facilities cannot be easily changed in the short run.

Discretionary fixed costs are those which can be avoided by management. Such costs are not permanent. Advertising, research and development cost, salaries of low level managers are examples of discretionary costs because these costs may be avoided or reduced in the short run if so desired by the managements.

This classification into committed and discretionary costs is important from the point of view of cost control and decision making.

D) Financial Costs :

Cash costs : Cash costs are those sacrifices that are reflected in actual cash outflows. Business transactions usually involve both reward (or revenue) and sacrifice (or cost) with the difference between the two being gain (or profit). Thus

$$\begin{array}{lcl} \text{Reward-Sacrifice} & = & \text{Gain} \\ \text{Revenue - Cost} & = & \text{Profit} \end{array}$$

Non-cash costs : Non-cash costs are financial sacrifices that do not involve cash outlays at the time when the cost is recognised. These costs are found in depreciation, opportunity costs etc.

(b) Non-Financial costs : Non financial costs are those costs that are not directly traceable through a company's cash flow. While such costs (e.g., low morale of employees) certainly involve sacrifices and they may lead eventually, in complex ways to a reduced cash flow in the future. They do not represent an immediate cash outlays.

The above cost concepts are based on several factors like controllability, period, situation, input-output relationship, opportunity, urgency, historical, product, etc. The clear understanding of costs concepts will help the management in analysis of costs, reporting, cost control and decision making.

E) Product Costs and Period Costs : Product costs are those costs which are necessary for production and which will not be incurred if there is not production. These consist of direct materials, direct labour and some of the factory overhead. Product costs are 'absorbed by' or 'attached to' the units produced.

Period costs are those which are not necessary for production and are written off as expenses in the period in which these are incurred. Such cost are incurred for a time period and are charged to Profit and Loss Account of the period, rent, salary of company executives, travel expenses are examples of period costs. These costs are not inventoried i.e. these are not included in the value of closing stocks.

Classification into product and period cost is important from the point of view of profit determination. This is so because product cost is carried forward to the next accounting period as part of the unsold finished stock whereas period cost is written off in the accounting period in which it is incurred.

F) Classification according to Identifiability with Cost Units : Costs are classified into direct and indirect on the basis of their identifiability with cost units or jobs or processes :

(i) **Direct costs :** These are those costs which are incurred for and may be conveniently identified with a particular cost unit, process or department.

(ii) **Indirect costs :** These costs cannot be conveniently identified with a particular cost unit, process or department. These are general costs and are incurred for the benefit of a number of cost units or cost centres.

Cost of raw materials used, wages of machine operators are common examples of direct costs. Examples of indirect costs are rent, repairs, depreciation, managerial salaries, coal, lubricating oil, wages of foreman, etc.

Costs are not traced or identified directly to a product for one of the three reasons :

1. It is impossible to do so e.g., rent of building etc.
2. It is not convenient or feasible to do so e.g., nails used in furniture, sewing thread, etc.

3. Management chooses not to do so i.e. many companies classify certain items of cost as indirect because it is customary in the industry to do so e.g., carriage inward etc.

This classification is important from the point of view of accurate ascertainment of cost. Direct costs of product can be conveniently determined while the indirect costs have to be arbitrarily apportioned to various cost units. For example, in readymade garments, the cost of cloth and wages of tailor are accurately ascertained without any difficulty and are thus direct costs. But the rent of factory, managerial salaries, etc., which are indirect costs, have to be apportioned to various cost units on some arbitrary basis and cannot be accurately ascertained.

G) Classification According to Controllability : The costs can also be classified into controllable and uncontrollable :

(i) **Controllable costs :** These are the costs which may be directly regulated at a given level of management authority. Variable costs are generally controllable by department heads. For example, cost of raw material may be controlled by purchasing in larger quantities.

(ii) **Uncontrollable costs :** These are those costs which cannot be influenced by the action of a specified member of an enterprise. Fixed costs are generally uncontrollable. For example, it is very difficult to control costs like factory rent, managerial salaries, etc.

Two important points should be noted regarding this classification. First, controllable costs cannot be distinguished from uncontrollable costs without specifying the level and scope of management authority. In other words, a cost which is uncontrollable at one level of management may be controllable at another level of management. Secondly, in the long-run all costs are controllable.

10.13 COMPONENTS OF TOTAL COST

Prime cost : It consists of direct material, direct labour and direct expenses. It is also known as basic, first or flat cost.

Factory cost : It comprises of prime cost and, in addition, works or factory overheads which include costs of indirect material, indirect labour, and indirect expenses of the factory. The cost is also known as works cost, production or manufacturing cost.

Office Cost : If office and administrative overheads are added to factory cost, office cost is arrived at. This is also termed as administrative cost or the total cost of production.

Total Cost : Selling and distribution overheads are added to the total cost of production to get the total cost or the cost of sales.

10.14 COST SHEET

The components of cost explained above can be presented in the form of a statement. Such a statement of cost giving total cost, cost per unit alongwith different cost components of is termed as a cost sheet. The computation of different cost components and preparation is a cost sheet can be understood with the following illustration :

Illustration 10.1 : Calculate the Prime cost, Factory cost, Total cost of production and Cost of sales from the following particulars :

	Rs.	Rs.
Raw Materials consumed	.....	20,000
Wages paid to labourers	.....	5,000
Directly chargeable expenses	.....	1000
Oil & Waste	.....	100
Wages of Foremen	.....	1,000
Storekeepers' Wages	.....	500
Electric Power	.....	200
Lighting: Factory	500	
Office	<u>200</u>	700
Rent: Factory	2,000	
Office	<u>1,000</u>	3,000
Repairs & Renewals :		
Factory Plant	500	
Machinery	1,000	
Office Premises	<u>200</u>	1,700
Depreciation :		
Office Premises	500	
Plant & Machinery	<u>200</u>	700
Consumable Stores	.....	1,000
Manager's Salary	.....	2,000
Directors' Fees	.....	500
Office Printing & Stationery	.....	200
Telephone Charges	.....	50
Postage & Telegrams	.....	100
Salesmen's Commission & Salary	.....	500
Travelling Expenses	.....	200
Advertising	.....	500
Warehouse Charges	.....	200
Carriage Outward	.....	150

Solution :**COST SHEET**

		Rs.	Rs.
Direct material : Raw material consumed			20000
Direct labour : Wages paid to labourers			5000
Direct expenses : Directly chargeable expenses			1000
PRIME COST			<u>26,000</u>
<i>Add :</i> Factory Overheads :			
Indirect material : Consumable stores	1,000		
Oil and waste	<u>100</u>	1,100	
Indirect labour : Wages of foreman	1,000		
Storekeepers' wages	<u>500</u>	1,500	
Indirect expenses : Electric power	200		
Factory lighting	500		
Factory rent	2,000		
Repairs & Renewals :			
Plant	500		
Machinery	1,000		
Depreciation :			
Plant & machinery	<u>200</u>	4,400	7,000
FACTORY OR WORKS COST			<u>33,000</u>
<i>Add :</i> Office and administrative overheads :			
Indirect material : Office printing and stationery		<u>200</u>	
Indirect labour : Manager's salary	2,000		
Directors' fees	<u>500</u>	2,500	
Indirect expenses : Office lighting	200		
Office rent	1,000		
Repairs and renewals office premises	200		
Dep. on office premises	500		
Telephone charges	50		
Postage & telegrams	<u>100</u>	2,050	4,750
TOTAL COST OF PRODUCTION			<u>37750</u>
<i>Add:</i> Selling & Distribution overheads :			
Indirect labour : Salesmen's commission and salary		500	
Indirect expenses : Travelling expenses	200		
Advertising	500		
Warehouse charges	200		
Carriage outward	<u>150</u>	1,050	1,550
COST OF SALES			<u><u>39,300</u></u>

Illustration 10.2 : The following figures have been extracted from the books of XYZ Ltd. for the year ending 31st March, 2000.

	Rs.
Direct materials	70,000
Direct wages	75,000
Indirect wages	10,000
Other direct expenses	15,000
Factory rent and rates	5,000
Office rent and rates	500
Indirect materials	500
Depreciation of plant	1,500
Depreciation of office furniture	100
Managing Director's remuneration	12,000
General factory expenses	5,700
General office expenses	1,000
General selling expenses	1,000
Travelling expenses	1,100
Office salaries	4,500
Carriage outward	1,000
Advertisements	2,000
Sales	2,50,000

From the above figures, calculate the following :

- (a) Prime cost
- (b) Works cost
- (c) Cost of production
- (d) Cost of sales
- (e) Net profit

Solution :

XYZ LTD.

Cost Sheet for the year ending 31st March, 2000

	R s .	Rs.
Direct materials consumed		70,000
Direct wages		75,000
Direct expenses		15,000
Prime Cost		1,60,000
Factory overhead :		
Indirect wages	10,000	
Factory rent & rates	5,000	
Indirect materials	500	
Depreciation of plant	1,500	
General factory expenses	5,700	22,700

	Works cost		1,82,700
Office and Administration Overhead			
Office rent and rates		500	
Depreciation of office furniture		100	
Managing Director's remuneration		12,000	
Office salaries		4,500	
General office expenses		1,000	18,100
	Cost of Production		2,00,800
Selling and distribution overhead :			
Travelling expenses		1,100	
Carriage outward		1,000	
Advertisements		2,000	
General selling expenses		1,000	5,100
	Cost of Sales		2,05,900
Profit			44,100
Sales			2,50,000

10.15 SUMMARY

Whatever may be the type of business, it involves expenditure on labour, materials and other items required for manufacturing and disposing of the product. Moreover, big business requires delegation of responsibility, division of labour and specialisation. Management has to avoid the possibility of waste at each stage. Management has to ensure that no machine remains idle, efficient labour gets due initiative, proper utilisation of by-products is made and costs are properly ascertained. Besides management, creditors and employees are also benefited in numerous ways by installation of a good costing system in an industrial organisation. Cost accounting increases the overall productivity of an industrial establishment and, therefore, serves as an important tool in bringing prosperity to the nation. The basic principles of ascertaining costs are the same in every system of cost accounting. However, the methods of analysing and presenting the cost may vary from industry to industry. The method to be used in collecting and presenting costs will depend upon the nature of production. Basically there are two methods of costing, namely. Job costing and Process costing. Cost is ascertained by cost centres or cost units or by both. The components of cost when presented in the form of a statement. Such a statement of cost giving total cost, cost per unit alongwith different cost components of is termed as a cost sheet.

10.16 KEYWORDS

Cost: The technique and process of ascertaining the cost is defined as costing.

Cost accounting: It is that branch of accounting which deals with the

classification, recording, allocation, summarisation and reporting of current and prospective costs.

Cost control: It represents the employment of management devices in the performance of any necessary operation so that pre-established objectives may be attained at the lowest possible outlay for goods and services.

Cost unit: A cost unit is a unit of finished product, service or time or combination of these in relation to which cost is ascertained and expressed.

Cost centre: A cost centre refers to a section of a factory for which costs are accumulated separately.

Cost sheet: A cost sheet is a statement which shows the details regarding the total cost of the job or a product.

10.17 SELF ASSESSMENT QUESTIONS

1. Define costing and discuss briefly its objectives and advantages.
2. State the differences between Financial Accounting, Cost Accounting and Management Accounting. Explain how financial accounts are inadequate to measure the performance of an industry.
3. "A good system of costing serves as a means of control over expenditure and helps to secure economy in manufacture" Discuss.
4. What are the main benefits that may be expected from the installation of costing system in a manufacturing business.
5. Describe, in brief, the various methods of costing.
6. Distinguish between 'Product and period Cost'
7. Write short note on 'Cost Centre' and 'Cost Unit'
8. Distinguish between :
 - (a) controllable costs and uncontrollable costs.
 - (b) Variable cost and direct cost.
 - (c) Cost control and profit control
 - (d) Sunk cost and Out of Pocket cost.
 - (e) Job costing and process costing.
9. "Costs may be classified in a variety of ways accord to their nature and the information needs of management". Explain and discuss this statement giving examples of classifications required for different purposes.

Subject : Accounting for Managers

Code : CP-104

Updated by: Dr. M.C. Garg

Lesson : 11

INTRODUCTION TO MANAGEMENT ACCOUNTING

STRUCTURE

- 11.0 Objective
- 11.1 Introduction
- 11.2 Classification of Accounting
- 11.3 Functions and Limitations of Financial Accounting
- 11.4 Emergence of Management Accounting
- 11.5 Functions of Management Accounting
- 11.6 Scope of Management Accounting
- 11.7 Distinction between Management and Financial Accounting
- 11.8 Cost Accounting and Management Accounting
- 11.9 Utility of Management Accounting
- 11.10 Limitations of Management Accounting
- 11.11 The Management Accountant
- 11.12 Summary
- 11.13 Keywords
- 11.14 Self Assessment Questions
- 11.15 Suggested Readings

11.0 OBJECTIVE

After reading this lesson, you should be able to

- (a) Define management accounting and explain the functions and scope of management accounting.
- (b) Differentiate between Financial and Management accounting, and cost and management accounting.
- (c) Discuss the role of management accountant.

11.1 INTRODUCTION

Accounting has been clearly defined as "the measurement and communication process of financial and economic data". The science of accounting is still in the evolutionary process. The traditional accounting is still in the evolutionary process. The traditional accounting, later styled as single entry form of book-keeping, was in vogue right from time immemorial. The modest beginning of accounting took the form of Financial Accounting based on double entry system. Under this method all business transactions were at first recorded in the books of prime entry, posted into respective ledger accounts, balances were struck and the trial balances were prepared from and out of which the annual Profit and Loss Account and Balance Sheet of a business concern were prepared. The final accounts of a concern called as the 'traditional package', helped the management in the process of decision-making.

Generally speaking, the science of management seeks to organize the quantitative factors of a business decision, while the art of management consists in weighing the qualitative factors in the scale of the manager's judgement, experience and insight to produce the best decision in the circumstances. Managers in the past, wholly relied on their intuition and experience in making business decisions vitally affecting the survival and success of their business units. But with the increase in the size and complexity of business due to a variety of factors like large scale operation, application of sophisticated modern technology, management has become more complex and cumbersome. To cope up with the increasing needs of large-scale business, the modern managers need meaningful and timely data for making decisions.

Accounting can be broadly classified into three types: (a) financial accounting, (b) cost accounting, and (c) management accounting. These three cannot be put in water-tight compartment classification; each one supplements the other. In fact, financial accounting provides the basis for cost accounting as well as management accounting and in the ultimate analysis management accounting includes part of cost accounting.

11.2 FUNCTIONS AND LIMITATIONS OF FINANCIAL ACCOUNTING

The American Institute of Certified Public Accountants has defined Financial Accounting as 'the art of recording, classifying and summarising in a significant manner and in terms of money, transactions and events which are in part at least of a financial character, and interpreting the results thereof.'

Accounting is the language effectively employed to communicate the financial information of a business unit to various parties interested in its progress such as proprietors, creditors, investors, employees, consumers, the Government, etc. Financial accounting concerns that part of accounting which is meant to serve all parties externally to the operating responsibility of the firm, e.g., creditors, investors, employees, regulatory bodies and the general public. But management accounting is designed for use in the operational needs of the firm.

Functions of Financial Accounting

Financial Accounting is supposed to perform the following functions:

- 1. Recording:** Since all business transactions cannot be kept in memory, they have got to be systematically recorded and pass through journals, ledgers and work sheets before they could take the forms of final accounts. This aspect of financial accounting has assumed considerable importance with the limitation of human memory.
- 2. Validating:** With the universal acceptance and enforcement of accounting principles, every recorded entry in the books of accounts maintained by a business unit gives validity or authenticity to all such transactions so recorded.
- 3. Communicating:** This is an important function of financial accounting. Accounting serves as a language for communicating the financial facts about the enterprise or

activity most effectively to all concerned interested in using and interpreting them.

4. **Interpreting:** This aspect helps in unfolding the total financial picture of an undertaking and investing the same with more meaning.

As Professor Theodore Levitt of Harvard Business School remarked recently, “data do not yield information except with the intervention of mind. Information does not yield meaning except with the intervention of imagination”. The intervention of both mind and imagination are needed to make the data meaningful.

Limitations of Financial Accounting

Financial Accounting like any other branch of knowledge, is not without limitations. The fast changing conditions and environmental factors have brought the limitations of financial accounting to the fore.

1. **Nature of business:** All the business in modern times have undergone radical changes and as the management needs a variety of data for decision making purpose. Financial accounting is not in a position to meet the requirements of the management in the important task of decision making process.
2. **Shift in emphasis:** There is a shift in the emphasis in accounting in modern times from what it was once— a mere record keeping in analysis and interpretation necessitated by the management. As a result, the role of the accountant

has been changed from that of a mere book keeper to a more important role of a financial advisor.

- 3. Technological revolution:** With the profile and advancement in science and technology very minute and detailed break-up of all types of data concerning various parts of a business unit have become a must for the management in its day-to-day functioning. It is clear that financial accounting with its simple structure is not in a position to cater to the requirements of the management on the above lines.
- 4. Importance of budgeting and planning:** The importance of budgeting and planning in any business unit is realised in modern times. Financial accounting furnishes only a postmortem of past records. It is an accepted principle that the past is often of little or no guidance to the future; yet the latter is the main concern of management, and therefore some aid, other than the, conventional financial accounts is essential.
- 5. Government regulations:** Financial accounting is primarily concerned with objectively quantifiable information and it does not take cognisance of sweeping changes and conditions brought by the government regulations will have a far reaching effect on the productivity as well as profitability of a business concern and they cannot be ignored.

6. **Varying informational needs:** The present day management is of three-tier system. Accordingly the informational needs of the different levels of management vary widely. They cannot be met wholly by the existing financial accounting. The annual Profit and Loss Account and Balance Sheet considered as a 'movie' and a 'still photograph' of a company respectively have been an end in themselves even though the story they tell is already out of date and is past history.

11.4 EMERGENCE OF MANAGEMENT ACCOUNTING

With the advancement of science and technology more sophisticated equipments and gadgets have been put into operation in the realm of accounting as well. This has changed the accounting from a mere device of recording to a powerful tool of forecasting, budgeting and budgetary control. Thus, financial accounting has been supplemented with financial and cost control, budgeting and budgetary control and also production planning and control besides reporting on business performance. Precisely, it has led to the emergence of management accounting.

The term 'Management Accounting' is of recent origin even in the USA. This term was first coined and used by the British Team of Accountants that visited the United States in 1950 under the auspices of Anglo-American Productivity Council. Since then management accounting has grown into a full fledged subject and is looked upon as a subject distinct from accounting in recent years. It is also otherwise

known as “Management-Oriented Accounting” or “Accounting for Management”.

In common parlance Management Accounting refers to the modern concept of accounts as an effective tool in the hands of the management as against the traditional package of accounts. The primary object is to furnish all the relevant financial and statistical information focusing on every phase of activity in the organization. This means that management accounting, in the words of W.M. Harper, is concerned with “(a) management need for information regarding the economic operation of the enterprise and (b) the actual direct management of cash.”

The Institute of Chartered Accountants of England and Wales has defined Management Accounting as ‘any form of accounting which enables a business to be conducted more efficiently be regarded as Management Accounting’. Management Accounting, according to J. Batty “is the term used to describe the accounting methods, systems, and techniques which, coupled with special knowledge and ability, assist management in its task of maximising profits or minimizing losses.” Robert Anthony opined that “Management Accounting is concerned with accounting information which is useful to management”. Shillinglaw has stated that accounting, which serves management by providing information as to the cost or profit associated with some portion of firm’s total operations, is called managerial accounting. But the most acceptable definition of Management Accounting has been furnished by the management accounting Team of Anglo-American Council on Productivity in its Report which reads: “Management Accounting is the presentation of accounting information

in such a way as to assist management in the creation of policy and the day-to-day operation of an undertaking. The technique of accounting is of extreme importance as it works in the most nearly universal medium available for the expression of facts so that facts of great diversity can be presented in the same picture. It is not the presentation of these pictures that is the function of management but the use of them.”

All these definitions of Management Accounting reveal the following salient features:

1. It is a merger of “management” and “accounting”.
2. It is concerned with accounting information which is useful to management in maximizing profits or minimizing losses.
3. It is concerned with the improvement in the efficiency of the various phases of management. Briefly management accounting with all its paraphernalia, does not supplement financial accounting as is erroneously misunderstood, but supplement the basic structure of traditional package of accounts to cater to the diversified requirements of modern management.

In the absence of an internationally accepted definition of management accounting, experts have used different terms to refer to managerial accounting such as business environment accounting, control accounting, decision accounting, responsibility accounting, etc. It is called responsibility accounting, since it provides accounting and statistical information to different levels of management to satisfy their needs.

11.4 FUNCTIONS OF MANAGEMENT ACCOUNTING

Broadly speaking the functions of management accounting embrace all activities concerning collection of statistical data, processing, analysing, interpreting and presentation of the same in a condensed capsule form, to satisfy the needs of different levels of management. The main functions of management accounting are discussed below:

1. Management accounting involves forecasts and planning of future operations of the business in the light of the past as well as present achievements. The formulation of business budgets will be immensely useful in guiding both short-term and long-term operations of the business in a most effective manner.
2. Management accounting does not confine itself merely to financial data to assist the management in the decision-making process but frequently draws upon various sources other than accounting for qualitative information which cannot be converted into monetary terms. For this purpose, engineering records, case studies, minutes of meetings, productivity reports, special surveys and other business documents are greatly relied upon.
3. Management accounting furnishes accounting data and statistical information required for the decision-making process in management which vitally affects the survival and the success of the business. This is affected through classification as well as combination of sales for different

months and their break-up according to the class of products, types of customers, terms of credit, territory, etc.

4. Management accounting, though concerned with past records, maintenance of values, allocation and fixation of responsibilities and the evaluation of the future developments, is primarily concerned with the analysis and interpretation of data which provide a new vista to the management. Thus, the analysis and interpretation of data which are considered as the backbone of management accounting, provide the necessary basis or infrastructure for a focus on all the phases of management.
5. Management accounting establishes standards of performance in the different realms of activities in such way that any deviation therefrom can be easily measured leading to further investigation of the causes and institution of prompt remedial measures for rectifying the same. This is made possible through budgetary control and standard costing which are essential adjuncts of management accounting.
6. Management accounting furnishes statistical information according to the varying requirements of the different levels of management, at periodic intervals. The three-tier management which is in vogue in the recent times requires information of various types at different intervals, e.g., the top level management requires information in a capsule form covering all aspects of the business at relatively long

intervals whilst detailed analysis relating to a particular aspect of the business at short intervals will suffice the persons in the lower rungs of the management ladder.

11.6 SCOPE OF MANAGEMENT ACCOUNTING

The scope of Management Accounting is very wide and broad-based and it includes within its fold, a variety of aspects of business operations. The following are some of the areas of specialization included within the ambit of management accounting:

- 1. Financial Accounting:** This pertains to recording of all business transactions in the books of prime entry, posting them into respective ledger accounts, balancing them and preparing a trial balance, from and out of which a profit and loss account showing the results of the business and also a balance sheet depicting assets and liabilities of the business concern are prepared. This in turn forms the basis for analysis and interpretation for furnishing meaningful data to the management.
- 2. Cost Accounting:** Costing refers to the classification, recording and allocation of expenditures for the determination of the cost of products or services, ensuring management control over the same. This includes the determination of cost of every order, job, contract, process, or unit as may be required. This helps in the sharpening of the internal aspects of financial accounting.

- 3. Forecasting and budgeting:** This refers to the formulation of budgets and forecasts, using standard norms in co-operation with operating and other departments of a business concern. The ultimate success of any budgeting depends on the proper setting of target figures in the budgets and the actual realization of the same in practice, without even a slight deviation due to external reasons beyond the control of the management.
- 4. Cost control techniques:** These serve as effective tools for comparing the actual results with the predetermined figures as laid down in budgets. They greatly help in translating the budgets into operating plans.
- 5. Statistical data:** It is concerned with the supply of necessary statistical data and particulars needed by various departments of the business concern. This includes as stated earlier, statistical compilation of case studies, engineering records, minutes of meetings, special surveys and many other business documents.
- 6. Taxation:** This necessitates the computation of profits in accordance with the provisions of the Income Tax Act and also prompt filing of returns periodically and payment of taxes.
- 7. Methods and procedures:** They are concerned with standardization of methods and procedures in all fields of management for improving efficiency as well as for reducing the cost considerably. This also involves the

preparation and issuance of accounting and other manuals which will provide the guidelines for others.

8. **Office services:** This mainly relates to the maintenance of data processing and other office management services, stencilling and duplicating, dealing of inward and outward mails, etc.
9. **Internal audit:** The effectiveness of the final audit depends in turn on the internal audit coverage in existence in any business concern.

Management accounting represents a happy blending of the two older professions of 'Management' and 'Accounting'. The two important elements in the success of a business concern are accounting control and management efficiency. These two determinants are completely merged in management accounting through the harnessing of accounting for improving the efficiency of management.

Management accounting greatly assists the management in achieving better results by making a clear shift in emphasis from mere recording of transactions to their analysis and interpretation to give a new vista to the management. It concerns with the tools and techniques of formulation of budgets and pre-setting of standards as well as evaluation of deviations in actual performance and also implementation of prompt remedial measures. In short, management accounting eliminates intuition from the field of business management and broadens the services of accounting to management.

11.7 DISTINCTION BETWEEN MANAGEMENT AND FINANCIAL ACCOUNTING

Though management accounting and financial accounting cannot be put in watertight compartment classification, it should be remembered that the former is only an off-shoot of the latter. Precisely, management accounting supplements the functions of financial accounting in as much as it provides the necessary accounting data and statistical information needed by the management for improving the efficiency as a whole. Despite the close inter-relationship that exists, there are certain points of difference between the two and they are discussed below:

1. **Focus:** In management accounting the main focus is on the internal details of any particular aspect of business operation, whereas in financial accounting the main focus is on the enterprise as a whole covering all the aspects of the business operation. In management accounting performance, evaluation and reports are concerned with individual departments, products, type of inventories, purchases, sales or other sub-divisions of the business enterprise. In financial accounting the balance sheet and the income statement reveal the overall performance of the enterprise as a whole for a specific period.
2. **Nature:** Management accounting is mainly concerned with the future plans and policies, whereas financial accounting is concerned with historical records relating to the past. Management relies on the past records for formulation of future plans and hence, the interdependence of management

accounting and financial accounting serves a limited purpose of throwing light on the events and results of the past. The forward looking management accounting greatly helps the management in improving the results in future through various tools and techniques of budgeting and budgetary control, standard costing, profit planning, etc.

3. **Characteristics:** Management accounting lays emphasis on those characteristics which increase the value of information put to variety of uses, like flexibility, approximation, comparability, etc., whereas financial accounting lays emphasis on those characteristics of information like objectivity, validity, absoluteness, etc. This marked difference sometimes creates a serious doubt as to whether both the characteristics can be preserved within the same structure.
4. **Dispatch:** Management accounting stresses on furnishing of information more quickly to facilitate the management in the decision-making process than is the case in financial accounting, since it is considered as a post-mortem of past records. In management accounting, up-to-date information and current figures provide the necessary foundation for formulation of budgets and forecasts for the improvement of the results in the future. It is well known that in financial accounting, the intervening time lag between the end of financial year and the preparation and presentation of final accounts for that year could not be reduced beyond a point.

5. **Obligatory:** In modern times a business concern is free to install the system of management accounting. It is more or less obligatory on the part of every business concern to adopt financial accounting for disclosing the results of the business to the rightful owners.
6. **Legal formalities:** Since a business concern is free to install the system of management accounting there is no statutory regulation fixing the norms and standards for preparation and presentation of accounting statements. Needless to state that these statements can be adapted to the changing needs of the management since they are meant for internal use, whereas, financial accounting statements are standardised and meant for external use. The provisions of the Companies Act in force govern the preparation and presentation of annual final accounts of companies.
7. **Type of data:** Management accounting makes use of a variety of data which are highly descriptive, statistical, subjective, and relate to the future, whilst financial accounting makes use of data which are precisely quantitative, objective, and monetary and relate to the past. The end-use of management accounting is not restricted and hence, can be used to an unlimited extent by the management accordingly as necessitated by the changing circumstances and environmental factors. But it is clear that the ultimate object of financial accounting ends with the preparation and presentation of final accounts in any business concern.

8. **Precision:** Management accounting lays no emphasis on precision as the data and particulars compiled are merely estimates and relate to the future. But in financial accounting precision is stressed greatly since the past result of the business is reflected through them.

11.8 COST ACCOUNTING AND MANAGEMENT ACCOUNTING

Cost Accounting is the process of accounting for costs. It embraces the accounting procedures relating to recording of all income and expenditure and the preparation of periodical statements and reports with the object of ascertaining and controlling costs. It is, thus, the formal mechanism by means of which the costs of products or services are ascertained and controlled. On the other hand, management accounting involves collecting, analysing, interpreting and presenting all accounting information which is useful to the management. It is closely associated with management control which comprises planning, executing, measuring and evaluating the performance of an organization. Thus, management accounting draws heavily on cost data and other information derived from cost accounting. Today cost accounting is generally indistinguishable from the so-called management accounting or internal accounting because it serves multiple purposes.

However, management accounting can be distinguished from cost accounting in one important respect. Management accounting has a wider scope as compared to cost accounting. Cost accounting deals primarily with cost data while management accounting involves the considerations of both cost and revenue. Management accounting is an

all inclusive accounting information system that covers financial accounting, cost accounting and all aspects of financial management. But it is not a substitute for other accounting functions. It involves a continuous process of reporting cost, financial and other relevant data in an analytical and informative way to management.

We should not be very much concerned with the boundaries of cost accounting and management accounting since they are complementary in nature. In the absence of a suitable system of cost accounting, management will not be in a position to have detailed cost information and their function is bound to lose significance, on the other hand, the management cannot effectively use the cost data unless it has been reported to them in a meaningful and informative form.

11.8 UTILITY OF MANAGEMENT ACCOUNTING

Management accounting provides invaluable services to management in all of its functions. The basic functions of management are: (i) Planning (ii) Controlling, (iii) Coordinating, (iv) Organising, (v) Motivating, and (vi) Communicating. Management accounting helps in performance of each of these functions effectively as explained below:

- (i) **Planning:** It involves formulation of policies, setting up of goals and initiating necessary programmes for achievement of the goals. Management accounting makes an important contribution in performance of this function. It makes available the relevant data after pruning and analysing them suitably for effective planning and decision-making.

- (ii) **Controlling:** It involves evaluation of performance keeping in view that the actual performance coincides with the planned one, and remedial measures are taken in the event of variation between the two. The techniques of budgetary control, standard costing and departmental operating statements greatly help in performing this function. As a matter of fact the entire system of control is designed and operated by the management accountant designated as controller.
- (iii) **Coordinating:** It involves interlinking of different divisions of the business enterprise in a way so as to achieve the objectives of the organisation as a whole. Thus, perfect coordination is required among production, purchase, finance, personnel, sales, departments, etc., Effective coordination is achieved through departmental budgets and reports which form the nucleus of management accounting.
- (iv) **Organising:** It involves grouping of operative action in a way as to identify the authority and responsibility within the organization. Management accounting here also plays a prominent role. The whole organization is divided into suitable profit or cost centres. A sound system of internal control and internal audit for each of the cost or profit centres helps in organizing and establishing a sound business structure.

- (v) **Motivating:** It involves maintenance of a high degree of morale in the organization. Conditions should be such that each person gives his best to realise the goals of the enterprise. The superiors should be in a position to find out whom to demote or promote or to reward penalise. Periodical departmental profit and loss accounts, budgets and reports go a long way in achieving this objective.

- (vi) **Communicating:** It involves transmission of data, results, etc. both to the insiders as well as outsiders. The orders of the superiors should be communicated to the subordinates while the results achieved by the subordinates should be reported to the superiors. Moreover, the management owes a duty to the creditors, prospective investors, shareholders, etc., to communicate to them about the progress, financial position, etc. of the enterprise, Management accounting helps the management in performance of this function by developing a suitable system of reporting which emphasises and highlights the relevant facts.

Management accounting is thus helpful to the management in every field of activity. This is the reason why management accountant is considered not only a service arm to management but also a part of management.

11.10 LIMITATIONS OF MANAGEMENT ACCOUNTING

Management accounting, as any other branch of knowledge, is not without limitations. Though the emergence of management accounting has greatly improved the managerial performance, yet the

new discipline has to face certain challenges and constraints conditioned mostly by the external factors. These factors curtail the effectiveness of management accounting and they are discussed below:

- 1. Continuance of intuitive decision-making:** Management accounting eliminates the intuitive decision-making process of management and replaces it with scientific decision-making. Unfortunately, much management is prone to take the easy and simple path of intuitive decision-making rather than the difficult but reliable scientific decision-making process in the day-to-day management.
- 2. Broad-based scope:** The scope of management accounting is wide and broad-based and this creates many difficulties in the implementation process. It is easy to record, analyse, and interpret an historical event converted into monetary terms in a most objective manner. But it will be difficult to perform the same functions in respect of future and unquantifiable situation in the light of the past records.
- 3. Comprehensive coverage:** The fusion of a number of subjects like financial accounting, statistics, engineering, economics, taxation, etc. has culminated in the emergence of management accounting. Under the circumstances, it should be remembered that lack of knowledge and understanding of any one or more of these subjects will have its impact on the fixation of standards as well as solutions to the problems connected with the management performance.

4. **Evolutionary stage:** Management accounting is a new discipline and growing subject too. It is still in the infancy stage and undergoing evolutionary process. Naturally, it faces certain obstacles and impediments before achieving perfection and finality. This necessitates sharpening of the analytical tools and improving of techniques for removing the air of doubt as regards uncertainty in their applications.
5. **Psychological resistance:** The management accounting system spells a radical change in the management approach towards solving day-to-day problems confronted by it. This calls for a bound to attract opposition especially from the labour force misconstruing it as a tool meant for their exploitation. Constant education about the benefits of such a new technique alone will allay the fears of the labour force by and large. Management accounting, as a new discipline, is no exception to this rule and it encountered psychological resistance at least in the initial stage.
6. **Costly installation:** For installation of a system of management accounting in a business concern, an elaborate organization and a large number of manuals are very essential. This in turn escalates the establishment charges such that only large scale organizations can afford to install it.

11.13 THE MANAGEMENT ACCOUNTANT

Management accounting provides significant economic and financial data to the management and the management Accountant is

the channel through which this information efficiently and effectively flows to the Management.

The Management Accountant has a very significant role to perform in the installation, development and functioning of an efficient and effective management accounting system. He designs the framework of the financial and cost control reports that provide each managerial level with the most useful data at the most appropriate time. He educates executives in the need for control information and ways of using it. This is because his position is unique with respect to information about the organization. Apart from top management no one in the organization perhaps knows more about the various functions of the organization than him. He is, therefore, sometimes described as the Chief Intelligence Officer of the top management. He gathers information, breaks it down, sifts it out and organises it into meaningful categories. He separates relevant and irrelevant information and then ranks relevant information according to degree of importance to management. He reports relevant information in an intelligible form to the management and sometimes also to those who are interested in the information outside the company. He also compares the actual performance with the planned one and reports and interprets the results of operations to all levels of management and to the owners of the business. Thus, in brief, management accountant or controller is the person who designs the management information system for the organization, operates it by means of interlocked budgets, compute vacancies and exhorts others to institute corrective measures. Mr. P.L. Tondon has explained beautifully the position of the management accountant in the following words:

“The management accountant is exactly like the spokes in a wheel, connecting the rim of the wheel and the hub receiving the information. He processes the information and then returns the processed information back to where it came from.”

Functions of the Management Accountant

It is the duty of the management accountant to keep all levels of management informed of their real position. He has, therefore, varied functions to perform. His important functions can be summarised as follows:

- 1. Planning:** He has to establish, coordinate and administer as an integral part of management, an adequate plan for the control of the operations. Such a plan would include profit planning, programmes of capital investment and financing, sales forecasts, expense budgets and cost standards.
- 2. Controlling:** He has to compare actual performance with operating plans and standards and to report and interpret the results of operations to all levels of management and the owners of the business. This is done through the compilation of appropriate accounting and statistical records and reports.
- 3. Coordinating:** He consults all segments of management responsible for policy or action. Such consultation might concern any phase of the operation of the business having to do with attainment of objectives and the effectiveness of the organisation structures and policies.

4. Other functions

- (i) He administers tax policies and procedures.
- (ii) He supervises and coordinates the preparation of reports to Government agencies.
- (iii) He ensures fiscal protection for the assets of the business through adequate internal control and proper insurance coverage.
- (iv) He carries out continuous appraisal of economic and social forces, and the government influences, and interprets their effect on then business.

It should be noted that the functions of a Management Accountant are more of those of a 'staff official'. He, in addition to processing historical data, supplies a good deal of information concerning the future operations, in line with the management's needs. Besides serving top management with information concerning the company as a whole, he supplies detailed information to the line officers regarding alternative plans and their profitability, which help them in decision-making. As a matter of fact the Management Accountant should not bother himself regarding the decision taken by the line officials after tendering advice unless he has reasonable grounds to believe that such a decision is going to affect the interests of the corporation adversely. In such an event also he should report it to the concerned level of management with fact, patience, firmness combined with politeness.

11.12 SUMMARY

Decision-making process, a vital function of the management, is highly facilitated by the information flowing from different sources.

Management accounting is one of the most important area because the information supplied by the management accounting are directly useful the managerial decision-making. In the ultimate analysis the businessman, like the army general in a battlefield confronted with a particular situation, must take a careful decision affecting the survival and success of the business. It is also highly imperative that a good management accounting department must be able to furnish all necessary facts of the situation along with various alternatives open to the businessman in such a situation, and also the estimates of the various costs and benefits arising out of different courses of action suggested. The better the presentation of such information, the easier would be the decision-making for the management.

In modern organization, when the problems of size, nature and competition have growth up, the role of management accounting has become more and more important. Today's manager cannot take and should not take any decision without being considering the information supplied by the department of accounting and finance. The future of good decision-making lies in good presentation of management accounting information.

11.13 KEYWORDS

Management Accounting: Management accounting is concerned with presentation of accounting information which helps management in the formulation of policy and to facilitate management in discharging its day-to-day activities.

Management Accountant: He is a person who collects and provides accounting, cost accounting, economic and statistical information to the

management to assist them in the performance of managerial functions and their evaluations.

Internal Audit: Internal audit is concerned with the verification of books of accounts within the organisation.

- 11.14 Self Assessment Questions
1. Discuss the importance of Management Accounting for managerial decision-making. State briefly the difference between management and financial accounting.
 2. “Management Accounting is the presentation of accounting information in such a way as to assist the management in the creation of policy and in day-to-day operation of the undertaking”. Elucidate.
 3. Explain the scope of management accounting. Discuss the functions of management accountant.
 4. How does management accounting differ from cost accounting? Discuss the utility of management accounting.
 5. Write short notes on the following:
 - (a) Financial accounting vs. cost accounting.
 - (b) Role of management accountant.

11.15 SUGGESTED READINGS

1. S.N. Mittal, Management and Financial Accounting.
2. Ravi M. Kishore, Advanced Management Accounting.
3. I.M. Pandey, Management Accounting.
4. S.N. Maheshwari, Management Accounting and Financial Control.
5. Vinayakam, Principles of Management Accounting.

Subject : Accounting for Managers

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Updated by: Dr. M.C. Garg

Lesson : 12

ANALYSIS AND INTERPRETATION OF FINANCIAL STATEMENTS : Meaning, Importance, Limitations and Tools

STRUCTURE

- 12.0 Objective
- 12.1 Introduction
- 12.2 Meaning of Analysis and Interpretation of Financial Statements
- 12.3 Objectives of Financial Analysis
- 12.4 Tools of Financial Analysis
- 12.5 Summary
- 12.6 Keywords
- 12.7 Self Assessment Questions
- 12.8 Suggested Readings

12.0 OBJECTIVE

After reading this lesson the students must be able :

- (i) To understand the meaning of financial statements and their analysis and interpretation.
- (ii) To apply various tools to analyse financial statements.

12.1 INTRODUCTION

The term financial statements generally refers to two basic statements : (i) The Income Statement, and (ii) The Balance Sheet. Of course, a business may also prepare a Statement of Retained Earnings, and a Statement of Changes in financial Position in addition to the above two statements.

Financial statements are prepared primarily for decision-making. They play a dominant role in setting the framework of managerial decisions. But the information provided in the financial statements is not an end in itself as no meaningful conclusions can be drawn from these statements alone. However, the information provided in the financial statements is of immense use in making decisions through analysis and interpretation of financial statements. Financial analysis is the process of identifying the financial strengths and weaknesses of the

firm by properly establishing relationship between the items of the balance sheet and the profit and loss account. There are various methods or techniques used in analysing financial statements, such as comparative statements, common-size statements, trend analysis, schedule of changes in working capital, funds flow, cash flow analysis and ratio analysis.

12.2 MEANING OF ANALYSIS AND INTERPRETATION OF FINANCIAL STATEMENTS

An analysis of financial statements is the process of critically examining in detail accounting information given in the financial statements. For the purpose of analysis, individual items are studied, their interrelationships with other related figures are established, the data is sometimes rearranged to have better understanding of the information with the help of different techniques or tools for the purpose. Analysing financial statements is a process of evaluating relationship between component parts of financial statements to obtain a better understanding of firm's position and performance. The analysis of financial statements thus refers to the treatment of the information contained in the financial statements in a way so as to afford a full diagnosis of the profitability and financial position of the firm concerned. For this purpose financial statements are classified methodically, analysed and compared with the figures of previous years or other similar firms.

The term 'Analysis' and 'interpretation' though are closely related, but distinction can be made between the two. Analysis means evaluating relationship between components of financial statements to understand firm's performance in a better way. Various account balances appear in the financial statements. These account balances do not represent homogeneous data so it is difficult to interpret them and draw some conclusions. This requires an analysis of the data in the financial statements so as to bring some homogeneity to the figures shown in the financial statements. Interpretation is thus drawing of inference and stating what the figures in the financial statements really mean. Interpretation is dependent on interpreter himself. Interpreter must have experience, understanding and intelligence to draw correct conclusions from the analysed data.

12.3 OBJECTIVES OF FINANCIAL ANALYSIS

Analysis of financial statements is made to assess the financial position and profitability of a concern. Analysis can be made through accounting ratios, fitting trend line, common size statements, etc. Accounting ratios calculated for a number of years show the trend of the change of position, i.e., whether the

trend is upward or downward or static. The ascertainment of trend helps us in making estimates for the future. Keeping in view the importance of accounting ratios the accountant should calculate the ratios in appropriate form, as early as possible, for presentation to management for managerial control. The main objectives of analysis of financial statements are :

- (i) to assess the profitability of the concern;
- (ii) to examine the operational efficiency of the concern as a whole and of its various parts or departments;
- (iii) to measure the short-term and long-term solvency of the concern for the benefit of the debenture holders and trade creditors;
- (iv) to undertake a comparative study in regard to one firm with another firm or one department with another department; and
- (v) to assess the financial stability of a business concern.

12.4 TOOLS OF FINANCIAL ANALYSIS

Financial Analyst can use a variety of tools for the purposes of analysis and interpretation of financial statements particularly with a view to suit the requirements of the specific enterprise. The principal tools are as under :

1. Comparative Financial Statements
2. Common-size Statements
3. Trend Analysis
4. Cash Flow Statement
5. Ratio Analysis
6. Funds Flow statements

1. Comparative Financial Statements : Comparative financial statements are those statements which have been designed in a way so as to provide time perspective to the consideration of various elements of financial position embodied in such statements. In these statements figures for two or more periods are placed side by side to facilitate comparison.

Both the Income Statement and Balance Sheet can be prepared in the form of Comparative Financial Statements.

a) Comparative Income Statement

The comparative Income Statement is the study of the trend of the same items/group of items in two or more Income Statements of the firm for different periods. The changes in the Income Statement items over the period would

help in forming opinion about the performance of the enterprise in its business operations. The Interpretation of Comparative Income Statement would be as follows:

- (i) The changes in sales should be compared with the changes in cost of goods sold. If increase in sales is more than the increase in the cost of goods sold, then the profitability will improve.
- ii) An increase in operating expenses or decrease in sales would imply decrease in operating profit and a decrease in operating expenses or increase in sales would imply increase in operating profit.
- iii) The increase or decrease in net profit will give an idea about the overall profitability of the concern.

Illustration 1 : The Income Statement of Sumit Ltd. are given for the years 2001 and 2002. Rearrange the figures in a comparative form and study the profitability position of the firm :

Items	2001 (Rs.)	2002 (Rs.)
Net Sales	17,00,000	22,00,000
<i>Less</i> Cost of Goods Sold	12,00,000	15,00,000
Gross Profit	5,00,000	7,00,000
<i>Less</i> Operating Expenses (Administration, Selling Distribution Expenses)	75,000	1,00,000
Operating Profit	4,25,000	6,00,000
<i>Add</i> Other Incomes	25,000	40,000
Earnings before Interest & Tax	4,50,000	6,40,000
<i>Less</i> Interest	40,000	40,000
Earnings before Tax	4,10,000	6,00,000
<i>Less</i> Tax Payable	84,000	1,60,000
Profit after Tax	3,26,000	4,40,000

Solution :

Comparative Income Statement
For the year ended 31st March, 2001 and 2002

Items	31.03.01 Rs.	31.03.02 Rs.	Increase (Decrease) (Rs.)	Percentage Increase (Decrease)
Net Sales	17,00,000	22,00,000	5,00,000	29.41
<i>Less</i> Cost of Goods Sold	12,00,000	15,00,000	3,00,000	25.0
Gross Profit	5,00,000	7,00,000	2,00,000	40.0
<i>Less</i> Operating Expenses (Administration Selling & Distribution Expenses)	75,000	1,00,000	25,000	33.3
Operating Profit	4,25,000	6,00,000	1,75,000	41.17
<i>Add</i> Other Incomes	25,000	40,000	15,000	60.0
Earning before Interest & Tax	4,50,000	6,40,000	1,90,000	42.2
<i>Less</i> Interest	40,000	40,000	–	–
Earning before tax	4,10,000	6,00,000	1,90,000	46.34
<i>Less</i> Tax	84,000	1,60,000	76,000	90.5
Earnings after Tax	3,26,000	4,40,000	1,14,000	34.97

b) Comparative Balance Sheet

The comparative Balance Sheet analysis would highlight the trend of various items and groups of items appearing in two or more Balance Sheets of a firm on different dates. The changes in periodic balance sheet items would reflect the changes in the financial position at two or more periods. The Interpretation of Comparative Balance Sheets are as follows :

- i) The increase in working capital would imply increase in the liquidity position of the firm over the period and the decrease in working capital would imply deterioration in the liquidity position of the firm.
- (ii) An assessment about the long-term financial position can be made by studying the changes in fixed assets, capital and long-term liabilities. If the increase in capital and long-term liabilities is more than the increase in fixed assets, it implies that a part of capital and long-term liabilities has been used for financing a part of working capital as well. This will be a reflection of the good financial policy. The reverse situation will be a signal towards increasing degree of risk to which the long-term solvency of the concern would be exposed to.

- iii) The changes in retained earnings, reserves and surpluses will give an indication about the trend in profitability of the concern. An increase in reserve and surplus and the Profit and Loss Account is an indication of improvement in profitability of the concern. The decrease in these accounts may imply payment of dividends, issue of bonus shares or deterioration in profitability of the concern.

Illustration 2 : From the following Balance Sheets of Ram Ltd. as on 31st December, 2000 and 2001, prepare a comparative Balance Sheet for the concern :

Balance Sheet of Ram Ltd. as on

Liabilities	2000 (Rs.)	2001(Rs.)	Assets	2000(Rs.)	2001Rs.)
Equity share capital	5,00,000	6,00,000	Land & Building	4,00,000	3,50,000
Reserves & surpluses	2,00,000	1,00,000	Plant & Machinery	2,40,000	2,90,000
Debentures	1,00,000	1,50,000	Furniture	25,000	30,000
Mortgage loan	80,000	1,00,000	Bills receivables	75,000	45,000
Bills Payable	30,000	25,000	S. Debtors	1,00,000	1,25,000
S. Creditors	50,000	60,000	Stock	1,13,000	1,72,000
Other current Liabilities	5,000	10,000	Prepaid Expenses	2,000	3,000
			Cash & Bank Balance	10,000	30,000
	9,65,000	10,45,000		9,65,000	10,45,000

Solution :

Comparative Balance Sheet of Ram Ltd.

Item	Year Ending		Increase (Decrease) (Rs.)	Increase/ (Decrease) (Percentage)
	31.12.2000 (Rs.)	31.12.2001 (Rs.)		
Fixed Assets				
Land & Building	4,00,000	3,50,000	(50,000)	(12.5)
Plant & Machinery	2,40,000	2,90,000	50,000	20.83
Furniture	25,000	30,000	5,000	20.0
Total Fixed Assets	6,65,000	6,70,000	5,000	0.75
Current Assets				
Bills receivable	75,000	45,000	(30,000)	(40.0)
S. Debtors	1,00,000	1,25,000	25,000	25.0
Stock	1,13,000	1,72,000	59,000	52.2
Prepaid Expenses	2,000	3,000	1,000	50.0
Cash & Bank Balance	10,000	30,000	20,000	200.0
Total Current Assets	3,00,000	3,75,000	75,000	25.0
Total Assets	9,65,000	10,45,000	80,000	8.29

Shareholders' Funds				
Equity Share Capital	5,00,000	6,00,000	1,00,000	20.0
Reserves & Surpluses	2,00,000	1,00,000	(1,00,000)	(50.0)
Total Shareholders Funds	7,00,000	7,00,000	00,000	0.0
Long-Term Loans				
Debentures	1,00,000	1,50,000	50,000	50.0
Mortgage Loan	80,000	1,00,000	20,000	25.0
Total Long-Term Loans	1,80,000	2,50,000	70,000	38.9
Current Liabilities				
Bills Payable	30,000	25,000	(5,000)	(16.7)
S. Creditors	50,000	60,000	10,000	20.0
Other Current Liabilities	5,000	10,000	5,000	100.0
Total Current Liabilities	85,000	95,000	10,000	11.8
Total Liabilities	9,65,000	10,45,000	80,000	8.29

2. Common-size Financial Statements : Common-size Financial Statements are those in which figures reported are converted into percentages to some common base. In the Income Statement the sale figure is assumed to be 100 and all figures are expressed as a percentage of sales. Similarly in the Balance sheet the total of assets or liabilities is taken as 100 and all the figures are expressed as a percentage of this total.

a) Common Size Income Statement

In the case of Income Statement, the sales figure is assumed to be equal to 100 and all other figures are expressed as percentage of sales. The relationship between items of Income Statement and volume of sales is quite significant since it would be helpful in evaluating operational activities of the concern. The selling expenses will certainly go up with increase in sales. The administrative and financial expenses may go up or may remain at the same level. In case of decline in sale, selling expenses should definitely decrease.

Illustration 3 : From the following Profit and Loss Accounts and the Balance Sheets of Swadeshi Polytex Ltd. for the year ended 31st December 2000 and 2001, you are required to prepare common size statements.

Profit and Loss Account

Particulars	2000	2001	Particulars	2000	2001
	Rs.	Rs.		Rs.	Rs.
To Cost of Goods sold	600	750	By Net Sales	800	1,000
To Operating Expenses :					
Administration Expenses	20	20			
Selling Expenses	30	40			
To Net Profit	<u>150</u>	<u>190</u>			
	<u>800</u>	<u>1,000</u>		<u>800</u>	<u>1,000</u>

Balance Sheet As on 31st December

(in lakhs of Rs.)

Liabilities	2000	2001	Assets	2000	2001
Bills Payable	50	75	Cash	100	140
Sundry Creditors	150	200	Debtors	200	300
Tax Payable	100	150	Stock	200	300
14% Debentures	100	150	Land	100	100
16% Preference Capital	300	300	Building	300	270
Equity Capital	400	400	Plant	300	270
Reserves	<u>200</u>	<u>245</u>	Furniture	<u>100</u>	<u>140</u>
	<u>1,300</u>	<u>1,520</u>		<u>1,300</u>	<u>1,520</u>

Solution :

Swadeshi Polytex Limited COMMON-SIZE INCOME STATEMENT For the years ended 31st December 2000 and 2001

(Figures in percentages)

Particulars	2000	2001
Net Sales	100	100
Cost of Goods Sold	75	75
Gross Profit	<u>25</u>	<u>25</u>
Operating Expenses :		
Administration Expenses	2.50	2
Selling Expenses	3.75	4
Total Operating Expenses	<u>6.25</u>	<u>6</u>
Operating Profit	18.75	19

Interpretation : The above statement shows that though in absolute terms, the cost of goods sold has gone up, the percentage of its cost to sales remains consistent at 75%. This is the reason why the Gross Profit continues at 25% of sales. Similarly, in absolute terms the amount of administration expenses remains the same but as percentage to sales it has come down by 5%. Selling expenses have increased by 25%. This all leads to net increase in net profit by 25% (i.e., from 18.75% to 19%).

b) Common Size Balance Sheet

For the purpose of common size Balance Sheet, the total of assets or liabilities is taken as 100 and all the figures are expressed as percentage of the total. In other words, each asset is expressed as percentage to total assets/liabilities and each liability is expressed as percentage to total assets/liabilities. This statement will throw light on the solvency position of the concern by providing an analysis of pattern of financing both long-term and working capital needs of the concern.

Swadeshi Polytex Limited		
COMMON-SIZE BALANCE SHEET		
For the years ended 31st December 2000 and 2001		
(Figures in percentage)		
	2000	2001
Assets	100	100
Current Assets :		
Cash	7.70	9.21
Debtors	15.38	19.74
Stock	15.38	19.74
Total Current Assets	38.46	48.69
Fixed Assets :		
Building	23.07	17.76
Plant	27.03	17.76
Furniture	7.70	9.21
Land	7.70	6.68
Total Fixed Assets	61.54	51.31
Total Assets	100	100

	2000	2001
	%	%
Liabilities and Capital	100	100
Current Liabilities :		
Bills Payable	3.84	4.93
Sundry Creditors	11.54	13.16
Taxes Payable	7.69	9.86
Total Current Liabilities	<u>23.07</u>	<u>27.95</u>
Long-term Liabilities :		
14% Debentures	7.69	9.86
Capital & Reserves :		
16% Preference Share Capital	23.10	19.72
Equity Share Capital	30.76	26.32
Reserves	15.38	16.15
Total Shareholder's Funds	<u>76.93</u>	<u>72.05</u>
Total Liabilities and Capital	100	100

Interpretation : The percentage of current assets to total assets was 38.46 in 2000. It has gone up to 48.69 in 2001. Similarly the percentage of current liabilities to total liabilities (including capital) has also gone up from 23.07 to 27.95 in 2001. Thus, the proportion of current assets has increased by a higher percentage (about 10) as compared to increase in the proportion of current liabilities (about 5). This has improved the working capital position of the company. There has been a slight deterioration in the debt-equity ratio though it continues to be very sound. The proportion of shareholder's funds in the total liabilities has come down from 69.24% to 62.19% while that of the debenture-holders has gone up from 7.69% to 9.86%.

3. Trend Analysis

The third tool of financial analysis is trend analysis. This is immensely helpful in making a comparative study of the financial statements of several years. Under this method trend percentages are calculated for each item of the financial statement taking the figure of base year as 100. The starting year is usually taken as the base year. The trend percentages show the relationship of each item with its preceding year's percentages. These percentages can also be presented in the form of index numbers showing relative change in the financial data of certain period. This will exhibit the direction, (i.e., upward or downward trend) to which the concern is proceeding. These trend ratios may be compared with industry ratios in order to know the strong or weak points of a concern. These are calculated only for major items instead of calculating for all items in the financial statements.

While calculating trend percentages, the following precautions may be taken :

- (a) The accounting principles and practices must be followed constantly over the period for which the analysis is made. This is necessary to maintain consistency and comparability.
- (b) The base year selected should be normal and representative year.
- (c) Trend percentages should be calculated only for those items which have logical relationship with one another.
- (d) Trend percentages should also be carefully studied after considering the absolute figures on which these are based. Otherwise, they may give misleading conclusions.
- (e) To make the comparison meaningful, trend percentages of the current year should be adjusted in the light of price level changes as compared to base year.

Illustration 4 : Interpret the results of operations of a trading concern using trend ratios, on the following information :

(Amount in '000 Rupees)

For the year ended 31st March				
Items	2001	2000	1999	1998
Sales (net)	13,000	12,000	9,500	10,000
Cost of goods sold	7,280	6,960	5,890	6,000
Gross Profit	5,720	5,040	3,610	4,000
Selling Expenses	1,200	1,100	970	1,000
Net Operating Profit	4,520	3,940	2,640	3,000

Solution :

Trend Ratios				
31st March, 1998=100				
Items	1998	1999	2000	2001
Sales	100	95	120	130
Gross of Goods sold	100	98	116	121
Gross Profit	100	90	126	143
Selling Expenses	100	97	110	120
Net Operating Profit	100	88	131	150

Interpretation

From the above statement the following points are worth noting :

- (a) The sales volume, cost of goods sold and selling expenses all declined in 1999 as compared to 1998 but the decrease in cost of goods sold and selling expenses was lesser to the decrease in sales volume.
- (b) The sales volume, cost of goods sold and selling expenses in 2000 and 2001 have increased in comparison to 1998 but the increase in cost of goods sold and selling expenses is lesser to the increase in sales volume.

In conclusion, it can be said that a large proportion of cost of goods sold and selling expenses is fixed and is not affected by changes in sales volume. This fact also becomes clear from this fact that in 1999 when sales fell down, the decrease in the company's net operating profit was faster to sales volume and in 2001 when the sales volume increased, the increase in company's net profit was faster to sales volume.

4. Cash Flow Statement

A cash flow statement shows an entity's cash receipts classified by major sources and its cash payments classified by major uses during a period. It provides useful information about an entity's activities in generating cash from operations to repay debt, distribute dividends or reinvest to maintain or expand its operating capacity; about its financing activities, both debt and equity; and about its investment in fixed assets or current assets other than cash. In other words, a cash flow statement lists down various items and their respective magnitude which bring about changes in the cash balance between two balance sheet dates. All the items whether current or non-current which increase or decrease the balance of cash are included in the cash flow statement. Therefore, the effect of changes in the current assets and current liabilities during an accounting period on cash position, which is not shown in a fund flow statement is depicted in a cash flow statement. The depiction of all possible sources and application of cash in the cash flow statement helps the financial manager in short term financial planning in a significant manner because the short term business obligations such as trade creditors, bank loans, interest on debentures and dividend to shareholders can be met out of cash only.

The preparation of cash flow statement is also consistent with the basic objective of financial reporting which is to provide information to investors, creditors and others which would be useful in making rational decisions. The basic

objective is to enable the users of information to make prediction about cash flows in an organisation since the ultimate success or failure of the business depends upon the amount of cash generated. This objective is sought to be met by preparing a cash flow statement.

DISTINCTION BETWEEN FUND FLOW STATEMENT AND CASH FLOW STATEMENT

Some of the main difference between a fund flow statement and a cash flow statement are described below :

1. **Concept of funds :** A fund flow statement is prepared on the basis of a wider concept of funds i.e., net working capital (excess of current assets over current liabilities) whereas cash flow statement is based upon narrower concept of funds i.e., cash only.
2. **Basis of accounting :** A fund flow statement can also be distinguished from a cash flow statement from the point of view of the basis of accounting used for preparing these statements. A fund flow statement is prepared on the basis of accrual basis of accounting, whereas a cash flow statement is based upon cash basis of accounting. Due to this reason, adjustments for incomes received in advance, incomes outstanding, prepaid expenses and outstanding expenses are made to compute cash earned from operations of the business (refer to computation of cash from operations). No such adjustments are made while computing funds from operations in the funds flow statement.
3. **Mode of preparation :** A fund flow statement depicts the sources and application of funds. If the total of sources is more than that of applications then it represents increase in net working capital. On the other hand if the total of applications of funds is more than that of sources then the difference represents decrease in net working capital. A cash flow statement depicts opening and closing balance of cash, and inflows and outflows of cash. In a cash flow statement, to the opening balance of cash all the inflows of cash are added and from the resultant total all the outflows of cash are deducted. The resultant balance is the closing balance of cash. A cash flow statement is just like a cash account which starts with opening balance of cash on the debit side to which receipts of cash are added and from the resultant total, the total of all the payments of cash (shown on the credit side) is deducted to find out the closing balance of cash.

4. **Treatment of current assets and current liabilities :** While preparing a funds flow statement the changes in current assets and current liabilities are not disclosed in the funds flow statement rather these changes are shown in a separate statement known as schedule of changes in working capital. In a cash flow statement no distinction is made between current assets and fixed assets, and current liabilities and long-term liabilities. All changes are summarised in the cash flow statements.
5. **Usefulness in planning :** A cash flow statement aims at helping the management in the process of short term financial planning. A cash flow statement is useful to the management in assessing its ability to meet its short term obligations such as trade creditors, bank loans, interest on debentures, dividend to shareholders and so on. A fund flow statement on the other hand is very helpful in intermediate and long-term planning, because though it is difficult to plan cash resources for two, three or more years ahead yet one can plan adequate working capital for future periods.

Uses and Importance of Cash Flow Statements

Cash flow statements are of great importance to a financial manager. The information contained in cash flow statement can help the management in the field of short-run financial planning and cash control. Some of the important advantages of cash flow statements are discussed below :

- 1) The projected cash flow statements if prepared in a business disclose surplus or shortage of cash well in advance. This helps in arranging utilisation of surplus cash as bank deposits or investment in marketable securities for short periods. Should there be shortage of cash, arrangement can be made for raising the bank loan or sell marketable securities.
2. Cash flow statements are of extreme help in planning liquidation of debt, replacement of plant and fixed assets and similar other decisions requiring outflow of cash from the business as they provide information about the cash generating ability of the business.
3. The cash flow statement pertaining to a particular year compared with the budget for that year reveals the extent to which the actual sources and applications of cash were in consonance with the budget. This exercise helps in refining the planning process in future.
4. The inter-firm and temporal comparison of cash flow statements reveals the trend in the liquidity position of a firm in comparison to other firms in the

industry. It can serve as a pointer to the need for taking corrective action if it is observed that the management of cash in the firm is not effective.

5. Cash flows statements are more useful in short term financial analysis as compared to fund flow statements since in the short run it is cash which is more important for executing plans rather than working capital.

Limitations of Cash flow Statements

1. The possibility of window dressing in cash position is more than in the case of working capital position of a business. The cash balance can easily be maneuvered by deferring purchases and other payments, and speeding up collections from debtors before the balance sheet date. The possibility of such maneuvering is lesser in respect of working capital position. Therefore a fund flow statement which shows reasons responsible for the changes in the working capital presents a more realistic picture than cash flow statement.
2. The liquidity position of a business does not depend upon cash position only. In addition to cash it is also dependent upon those assets also, which can be converted into cash. Exclusion of these assets while assessing the liquidity of a business obscures the true reporting of the ability of the business in meeting its liabilities on becoming due for payment.
3. Equating of cash generated from the operations of the business with the net operating income of the business is not fair because while computing cash generated from business operations, depreciation on fixed assets is excluded. This treatment leads to mismatch between the expenses and revenue while determining the business results as no charge is made in the profit and Loss account for the use of fixed assets.
4. Relatively larger amount of cash generated from business operations vis-a-vis net profit earned may prompt the management to pay higher rate of dividend, which in turn may affect the financial health of the firm adversely.

PROCEDURE FOR PREPARING A CASH FLOW STATEMENT

Cash flow statement shows the impact of various transactions on cash position of a firm. It is prepared with the help of financial statements, i.e., balance sheet and profit and loss account and some additional information. A cash flow statement starts with the opening balance of cash and balance at bank, all the inflows of cash are added to the opening balance and the outflows of cash are deducted from the total. The balance, i.e, opening balance of cash and bank balance plus

inflows of cash minus outflows of cash is reconciled with the closing balance of cash. The preparation of cash flow statement involves the determining of :

- (a) Inflows of cash.
- (b) Outflows of cash.

(a) Sources of Cash Inflows :

The main sources of cash inflows are :

- (1) Cash flow from operations.
- (2) Increase in existing liabilities or creation of new liabilities.
- (3) Reduction in or Sale of Assets.
- (4) Non-trading Receipts.

(b) Application of Cash

- (1) Cash lost in operation.
- (2) Decrease in or discharge of liabilities.
- (3) Increase in or purchase of assets.
- (4) Non-trading payments.

Generally, cash flow statement is prepared in two forms :

- (a) Report form
- (b) T Form or an Account Form or Self Balancing Type

SPECIMEN OF REPORT FORM OF CASH FLOW STATEMENT

Cash balance in the beginning

Rs.

Add : Cash inflows :

Cash flow from operations

Sale of assets

Issue of shares

Issue of debentures

Raising of loans

Collection from debtors

Non trading receipts such as :

Dividend received

Income tax refund

Less : Applications or Outflows of cash :

Redemption of Preference shares

Redemption of debentures

Repayment of loans

Purchase of assets	
Payment of dividend	
Payment of taxes	
Cash lost in operations	
Cash Balance at the end	

**SPECIMEN OF T FORM OR AN ACCOUNT OF CASH FLOW
STATEMENT**

	Rs.		Rs.
Cash balance in the beginning		<i>Outflow of Cash :</i>	
<i>Add : Cash inflows :</i>		Redemption of Preference	
Cash flow from operation		Shares	
Sale of Assets		Redemption of Debentures	
Issue of Shares		Repayment of Loans	
Issue of Debentures		Purchase of Assets	
Raising of Loans		Payment of Dividends	
Collection from Debtors		Payment of Tax	
Dividends Received		Cash lost in Operations	
Refund of tax		Cash Balance at the end	

SOURCE OF CASH INFLOWS

1. Cash from Operations or Cash Operating Profit

Cash from trading operations during the year is a very important source of cash inflows. The net effect of various transactions in a business during a particular period is either net profit or net loss. Usually, net profit results in inflow of cash and net loss in outflow of cash. But it does not mean that cash generated from trading operations in a year shall be equal to the net profit or that cash lost in operations shall be identical with net loss. It may either be more or less. Even, there may be a net loss in a business, but yet there may be a cash inflow from operations. It is so because of certain non-operating (expenses or incomes) charged to the income statement, i.e., Profit and Loss Account.

How to Calculate Cash from Operations or Cash Operating Profit ?

There are three methods of determining cash from operations :

(a) **From Cash Sales :** Cash from operations can be calculated by deducting cash purchases and cash operating expenses from cash sales, i.e. Cash from

Operations=

(Cash Sales) – (Cash Purchases + Cash Operating Expenses).

Cash sales are calculated by deducting credit sales or increase in receivables from the total sales. From the cash sales, the cash purchases and cash operating expenses are to be deducted. In the absence of any information, all expenses may be assumed to be cash expenses. In case outstanding and prepaid expenses are known/given, any decrease in outstanding expenses or increase in prepaid expenses should be deducted from the corresponding figure.

(b) **From Net Profit/Net Loss**

Cash from operations can also be calculated with the help of net profit or net loss. Under this method, net profit or net loss is adjusted for non-cash and non-operating expenses and incomes as follows :

Calculation of Cash From Trading Operations

	Amount
Net Profit (as given)	
<i>Add</i> : Non cash and Non-operating items which have already been debited to P & L A/c :	
Depreciation	
Transfer to Reserves	
Transfer to Provisions	
Goodwill written off	
Preliminary expenses written off	
Other intangible assets written off	
Loss on sale or disposal of fixed assets	
Increase in Accounts Payable	
Increase in outstanding expenses	
Decrease in prepaid expenses	
<i>Less</i> : Non-cash and Non-operating items which have already been credited to P & L A/c :	
Increase in Accounts Receivables	
Decrease in Outstanding Expenses	
Increase in Prepaid Expenses	
Cash from Operations	

(C) Cash Operating Profit

Cash operating profit is also calculated with the help of net profit or net loss. The difference in this method as compared to the above discussed method is that increase or decrease in accounts payable and accounts receivable is not adjusted while finding cash from operations and it is directly shown in the cash flow statement as an inflow or outflow of cash as the cash may be. The cash from operations so calculated is generally called operating profit.

Calculation of Cash Operating Profit	Amount
Net Profit (as given) or Closing Balance of Profit and Loss A/c <i>Add</i> : Non-cash and non-operating items which have already been debited to P& L A/c : Depreciation Transfers to Reserves and Provisions Writing off intangible assets Outstanding Expenses (current year) Prepaid Expenses (previous year) Loss on Sale of fixed Assets Dividend Paid, etc. <i>Less</i> : Non-cash and non-operating items which have already been credited to P& L A/c : Profit on Sale or disposal of fixed assets Non-trading receipts such as dividend received, rent received, etc. Re-transfers from provisions (excess provisions charged back) Outstanding income (current year) Pre-received income (in previous year) Opening balance of P&L A/c Cash Operating Profit	

Note: Generally the cash operating profit method has to be followed because of its similarity with calculating funds from operations. However, if this method is followed the following two points need particular care :

(i) **Outstanding/Accrued Expenses** : The outstanding/accrued expenses represent those expenses which are although charged to profit and loss account but no cash is paid during the year. For this reason, outstanding/accrued expenses of

the current year are added back while calculating cash operating profit. However if some outstanding expenses of the previous year are also given, these may be assumed to have been paid during the year and hence shown as an outflow of cash in the cash flow statement.

(ii) **Prepaid Expenses :** Prepaid expenses are those expenses which are paid in advance and hence result in the outflow of cash but are not charged to profit and loss account because they do not relate to the current period of profit and loss account. For this reason, prepaid expenses of the current year should be taken as an outflow of cash in the cash flow statement. But the expenses, if any, paid in the previous year do not involve outflow of cash in the current year but are charged to profit and loss account. Therefore, prepaid expenses of the previous year (related to the current year) should be added back while calculating cash operating profit. In the similar way, we can deal with outstanding and pre-received incomes.

Illustration 5. Calculate Cash from operations from the following informations :

	Rs.
Sales	70,000
Purchases	40,000
Expenses	8,000
Creditors at the end of the year	15,000
Creditors in the beginning of the year	12,000

Solution :

	Rs.	Rs.
Sales		70,000
<i>Less</i> : Purchases	40,000	
Expenses	<u>8,000</u>	<u>48,000</u>
Profit for the year		22,000
<i>Add</i> : Creditors at the end of the year		<u>15,000</u>
		37,000
<i>Less</i> : Creditors at the beginning of the year		<u>12,000</u>
Cash from operations		<u>25,000</u>

2. Increase in Existing Liabilities or Creation of new Liabilities

If there is an increase in existing liabilities or a new liability is created during the year, it results in the flow of cash into the business. The liability may be either a fixed long-term liability such as equity share capital, preference share

capital, debentures, long-term loans, etc. or a current liability such as sundry creditors, bills payable, etc.

The inflow of cash may be either Actual or Notional

There is an actual inflow of cash when cash is actually received and generally long-term liabilities result into actual inflow of cash, e.g.

For issue of Shares, during the year, the journal entry shall be

Cash A/c	Dr.
To Share Capital A/c	

So, actual cash flows into the business. In the same manner, issue of debentures, raising of loans for cash, etc. result into actual inflows of cash. But when the fixed liabilities are created in consideration of purchase of assets, i.e., other than cash, there is no inflow of actual cash. The journal entry for the issue of debentures in lieu of purchase of machinery is :

Plant and Machinery A/c	Dr.
To Debentures A/c	

Usually, current liabilities result into inflow of notional cash. For example, increase in sundry creditors implies purchase of goods on credit. In this case although no cash is actually received but we may say that creditors have given us loans which have been utilised in purchasing goods from them. Hence, increase in the current liabilities may be taken as a source of inflow of cash and decrease in current liabilities as an outflow of cash.

3. Reduction in or Sale of Assets

Whenever a reduction in or sale of any asset-fixed or current-takes place (otherwise than depreciation) it results into inflow of actual or notional cash. There is an actual inflow of cash when assets are sold for cash and notional cash flows in when assets are sold or disposed off on credit. Thus, sale of building, machinery or even reduction in current assets like stocks, debtors, etc. result in inflow of actual notional cash.

4. Non-Trading Receipts

Sometimes, there may be non-trading receipts like dividend received, rent received, refund of tax, etc. Such receipts or incomes are although non-trading

in nature but they result into inflow of cash and hence taken in the cash flow statement.

APPLICATIONS OF CASH OR CASH OUTFLOWS

1. **Cash Lost in Operations** : Sometimes the net result of trading in a particular period is a loss and some cash may be lost during that period in trading operations. Such loss of cash in trading is called cash lost in operations and is shown as an outflow of cash in Cash Flow Statement.

2. **Decrease in or Discharge of Liabilities** : Decrease in or discharge of any liability, fixed or current results in outflow of cash either actual or notional. For example, when redeemable preference shares are redeemed and loans are repaid, it will amount to an outflow of actual cash. But when a liability is converted into another, such as issue of shares for debentures, there will be a notional flow of cash into the business.

3. **Increase in or Purchase of Assets** : Just like decrease in or sale of assets is a source or inflow of cash, increase or purchase of any assets is a outflow or application of cash.

4. **Non Trading Payments** : Payment of any non-trading expenses also constitute outflow of cash. For example, payment of dividends, payment of income-tax, etc.

Illustration 6 : The following details are available from a company.

Liabilities	31-12-98	31-12-99	Assets	31-12-98	31-12-99
	Rs	Rs.		Rs.	Rs.
Share Capital	70,000	74,000	Cash	9,000	7,800
Debentures	12,000	6,000	Debtors	14,900	17,700
Reserve for doubtful debts	700	800	Stock	49,200	42,700
Trade Creditors	10,360	11,840	Land	20,000	30,000
P & L A/c	10,040	10,560	Goodwill	10,000	5,000
	1,03,100	1,03,200		1,03,100	1,03,200

Additional Information : (i) Dividend paid total Rs. 3,500, (ii) Land was purchased for Rs. 10,000. Amount provided for amortisation of goodwill Rs. 5,000 and (iii) Debentures paid off Rs. 6,000

Prepare Cash Flow Statement.

Solution :

Cash Flow Statement
(for the year ended 31.12.1999)

	Rs.		Rs.
Opening balance of cash on 1.1.1999	9,000	<i>Cash Outflows</i>	
<i>Add : Cash Inflows :</i>		Purchase of Land	10,000
Issue of Share Capital	4,000	Increase in Debtors	2,800
Increase in trade creditors	1,480	Redemption of Debentures	6,000
Cash inflow from operations	9,120	Dividends Paid	3,500
Decrease in stock	6,500	Closing balance of cash on 31.12.1999	7,800
	30,100		30,100

Workings :

- Cash inflow from operations

Adjusted Profit And Loss A/c

	Rs.		Rs.
To Dividend (non-operating)	3,500	By Balance b/d	10,040
To Goodwill (non-fund/cash)	5,000	By Cash inflow from operation	9,120
To Reserve for doubtful debts	100		
To Balance c/d	10,560		
	19,160		19,160

Alternatively

	Rs.
Balance of P & L A/c on 31.12.1999	10,560
<i>Add : non-fund/cash and non-operating items which have already been debited to P & L A/c :</i>	
Dividend paid	3,500
Goodwill written off	5,000
Reserve for doubtful debts	<u>100</u>
	19,160
 <i>Less : Opening balance of P & L A/c and non-operating incomes :</i>	
Opening balance of P/L A/c (on 31.12.1998)	<u>10,040</u>
Cash Inflow from operations	<u>9,120</u>

5. Ratio Analysis : This has been discussed in detail in Lesson No. 13.

6. Funds Flow Statement : This has been discussed in detail in Lesson No. 14.

12.5 SUMMARY

An analysis of financial statements is the process of critically examining in detail accounting information given in the financial statements. For the purpose of analysis, individual items are studied, their interrelationships with other related figures are established, the data is sometimes rearranged to have better understanding of the information with the help of different techniques or tools for the purpose. Analysing financial statements is a process of evaluating relationship between component parts of financial statements to obtain a better understanding of firm's position and performance. The principal tools of financial analysis include comparative financial statements, common size statements, trend analysis, cash flow statements, ratio analysis and fund flow statements.

12.6 KEYWORDS

Financial statement: Financial statements refers to formal and original statements which are prepared to disclose financial health in the terms of profits, position, and prospects as on a certain data.

Analysis of financial statement: It refers to the art of applying various tools to know the behaviour of the accounting information.

Interpretation of financial statement: This refers to evaluating the performance of the business.

Comparative financial statements: These enable comparison of financial information for two or more years placed side by side.

Trend analysis: Trend analysis can be defined as the index numbers of the movements of the various financial items on the financial statement for a number of periods.

Cash flow statement: It is a statement designed to highlight upon the causes which brings changes in cash position between two balance sheet dates.

12.7 SELF ASSESSMENT QUESTIONS

1. What do you mean by analysis of financial statements? Discuss the different methods used for the analysis and interpretation of financial statements.
2. What are comparative statements? What is their usefulness ?
3. What is meant by common-size statements? What purpose do they serve ?
4. How common-size statements are different from comparative statements ?
5. Distinguish between fund flow and cash flow statements. What are the advantages of preparing cash flow statements ?

6. Explain the different formats for preparing a cash flow statement. How this statement can be used as a tool for planning and control?
7. From the following balance sheets of Pardeep Ltd. for the year ending 31st March 1998 and 31st March 1999, prepare a comparative balance sheet of the company and comment upon the financial position of the company.

Liabilities	31.3.1998	31.3.1999	Assets	31.3.1998	31.3.1999
	(Rs.)	(Rs.)		(Rs.)	(Rs.)
Equity Share Capital	3,00,000	4,00,000	Goodwill	60,000	55,000
10% Preference Share	80,000	50,000	Land & Building	1,25,000	85,000
Capital Reserve	5,000	20,000	Plant & Machinery	1,20,000	2,25,000
General reserve	26,000	40,000	Furniture	15,000	12,000
Profit and Loss Account	25,000	35,000	Trade Investments	12,000	48,000
Sundry Creditors	30,000	57,000	Sundry Debtors	65,000	1,05,000
Bills payable	12,000	9,000	Stock	90,000	84,000
Outstanding expenses	6,000	5,000	Bills Receivable	16,000	30,000
Proposed Dividend	30,000	42,000	Cash at Bank	15,000	20,000
Provision for tax	32,000	36,000	Cash in Hand	13,000	20,000
			Preliminary Expenses	15,000	10,000
	5,46,000	6,94,000		5,46,000	6,94,000

8. From the following figure of Shalu & Co., calculate the trend percentages, taking 1991 as the base and interpret them :

Year	Sales	Cost of goods sold	Stock	Profit before tax
1991	17.80	10.30	2.78	3.20
1992	20.40	12.50	3.24	4.05
1993	22.50	13.60	3.40	4.22
1994	28.10	15.80	3.44	5.25
1995	35.25	20.40	4.35	6.40
1996	40.30	25.00	4.70	6.90

9. Balance Sheets of M/s Pardeep & Co. as on 31.12.98 and 31.12.99 were as follows:

Liabilities	1998	1999	Assets	1998	1999
	(Rs.)	(Rs.)		(Rs.)	(Rs.)
Creditors	40,000	44,000	Cash	10,000	7,000
Mrs. White's Loan	25,000	–	Debtors	30,000	50,000
Loan from P.N. Bank	40,000	50,000	Stock	35,000	25,000
Capital	1,25,000	1,53,000	Machinery	80,000	55,000
			Land	40,000	50,000
			Buildings	35,000	60,000
	<u>2,30,000</u>	<u>247,000</u>		<u>2,30,000</u>	<u>2,47,000</u>

During the year a machine costing Rs. 10,000 (accumulated depreciation Rs. 3,000) was sold for Rs. 5,000. The provision for depreciation against machinery as on 1.1.98 was Rs. 25,000 and on 31.12.1999 Rs. 40,000. Net profit for the year 1998 amounted to Rs. 45,000. You are required to prepare :

(a) Cash Flow Statement

(b) Funds (working capital) Flow Statement

10. The following are the Balance Sheets of Golu & Co Ltd. as on 31st December 1998 and 31st December 1999.

	1998	1999		1998	1999
Liabilities	Rs.	Rs.	Assets	Rs.	Rs.
Equity share capital	15,75,000	18,00,000	Fixed Assets	11,25,000	13,50,000
General Reserve	10,12,500	13,50,000	Additions	2,25,000	1,80,000
P/L Account	3,89,250	5,24,250		13,50,000	15,30,000
Trade creditors	15,75,000	20,25,000	Depreciation	4,50,000	7,20,000
Bank overdraft	25,87,500	31,50,000		9,00,000	8,10,000
Outstanding Expenses	1,80,000	2,07,000	Trade Investment	2,70,000	—
Provision for Taxation	4,43,250	8,32,500	Debtors	40,05,000	49,16,250
Proposed Dividend	3,37,500	3,37,500	Stock	29,25,000	45,00,000
	81,00,000	1,02,26,250		81,00,000	1,02,26,250

The profit for the year 1999 as per profit and loss account after providing for depreciation amounted to Rs. 1575000 which was further adjusted as follows

Profit & Los Balance b/f		3,89,250
Profit after Depreciation		15,75,000
Add Profit on sale of Investment		<u>45,000</u>
		20,09,250
Less : Provision for tax	8,10,000	
Transfer dividend	3,37,500	
Proposed dividend	<u>3,37,500</u>	<u>14,85,000</u>
Balance c/d		5,24,250

You are informed that

- i) The sales and purchases of the year 1999 amounted to Rs. 180,00,000 and Rs. 146,25,000 respectively.
 - ii) In arriving at the profit from the sales referred to above, the cost of sales, administration and selling expenses were deducted.
- You are required to prepare a cash flow statement.

Subject : Accounting for Managers

Course Code : CP-104

Lesson : 13

Updated by: Dr. M.C. Garg

**ANALYSIS AND INTERPRETATION OF FINANCIAL
STATEMENTS : RATIO ANALYSIS**

STRUCTURE

- 13.0 Objective
- 13.1 Introduction
- 13.2 Meaning of Ratio Analysis
- 13.3 Interpretation of Financial Ratios
- 13.4 Managerial Uses of Ratio Analysis
- 13.5 Drawback of Ratio Analysis
- 13.6 Classification of Ratios
 - 13.6.1 Liquidity Ratios
 - 13.6.2 Activity Ratios
 - 13.6.3 Leverage/Capital Structure
 - 13.6.4 Coverage Ratios
 - 13.6.5 Profitability Ratios
- 13.7 Summary
- 13.8 Keywords
- 13.9 Self Assessment Questions
- 13.10 Suggested Readings

13.0 OBJECTIVE

After reading this lesson you should be able to

- (i) understand the meaning, uses and limitations of ratio analysis;
- (ii) workout all the important ratios that are required to analyse liquidity position, operational efficiency, capital structure, profitability and solvency position of manufacturing, trading, and service concerns.

13.1 INTRODUCTION

An analysis of financial statements is the process of critically examining in detail accounting information given in the financial statements. For the purpose of analysis, individual items are studied, their interrelationships with other related figures

are established, the data is sometimes rearranged to have better understanding of the information with the help of different techniques or tools for the purpose. Analysing financial statements is a process of evaluating relationship between component parts of financial statements to obtain a better understanding of firm's position and performance. The analysis of financial statements thus refers to the treatment of the information contained in the financial statements in a way so as to afford a full diagnosis of the profitability and financial position of the firm concerned. For this purpose financial statements are classified methodically, analysed and compared with the figures of previous years or other similar firms.

The term 'Analysis' and 'interpretation' though are closely related, but distinction can be made between the two. Analysis means evaluating relationship between components of financial statements to understand firm's performance in a better way. Various account balances appear in the financial statements. These account balances do not represent homogeneous data so it is difficult to interpret them and draw some conclusions. This requires an analysis of the data in the financial statements so as to bring some homogeneity to the figures shown in the financial statements. Interpretation is thus drawing of inference and stating what the figures in the financial statements really mean. Interpretation is dependent on interpreter himself. Interpreter must have experience, understanding and intelligence to draw correct conclusions from the analysed data.

13.2 MEANING OF RATIO ANALYSIS

A ratio is a simple arithmetical expression of the relationship of one number to another. According to Accountant's Handbook by Wixon, Kelland bedbord, "a ratio" is an expression of the quantitative relationship between two numbers". In simple language ratio is one number expressed in terms of the other and can be worked out by dividing one number into the other. This relationship can be expressed as (i) percentages, say, net profits are 20 per cent of sales (assuming net profits of Rs. 20,000 and sales of Rs. 1,00,000), (ii) fraction (net profit is one-fourth of sales) and (iii) proportion of numbers (the relationship between net profits and sales is 1:4).

The rational of ratio analysis lies in the fact that it makes related information comparable. A single figure by itself has no meaning but when expressed in terms of a related figure, it yields significant inferences. Ratio analysis helps in financial forecasting, making comparisons, evaluating solvency position of a firm, etc. For instance, the fact that the net profits of a firm amount to, say, Rs. 20 lakhs throws no light on its adequacy or otherwise. The figure of net profit has to be considered in relation to other variables. How does it stand in relation to sales? What does it represent by way of return on total assets used or total capital employed? In case

net profits are shown in terms of their relationship with items such as sales, assets, capital employed, equity capital and so on, meaningful conclusions can be drawn regarding their adequacy. Ratio analysis, thus, as a quantitative tool, enables analysts to draw quantitative answers to questions such as : Are the net profits adequate ? Are the assets being used efficiently? Can the firm meet its current obligations and so on ? However, ratio analysis is not an end in itself. Calculation of mere ratios does not serve any purpose, unless several appropriate ratios are analysed and interpreted. The following are the four steps involved in the ratio analysis :

- (i) Selection of relevant data from the financial statements depending upon the objective of the analysis.
- (ii) Calculation of appropriate ratios from the above data.
- (iii) Comparison of the calculated ratios with the ratios of the same firm in the past, or the ratios developed from projected financial statements or the ratios of some other firms or the comparison with ratios of industry to which the firm belongs.
- (iv) Interpretation of the ratio.

13.3 INTERPRETATION OF RATIOS

The interpretation of ratios is an important factor. Though calculation is also important but it is only a clerical task whereas interpretation needs skills, intelligence and foresightedness. The interpretation of the ratios can be done in the following ways :

1. **Single Absolute Ratio:** Generally speaking one cannot draw meaningful conclusions when a single ratio is considered in isolation. But single ratios may be studied in relation to certain rules of thumb which are based upon well proven contentions as for example 2:1 is considered to be a good ratio for current assets to current liabilities.
2. **Groups of Ratio :** Ratios may be interpreted by calculating a group of related ratios. A single ratio supported by related additional ratios becomes more understandable and meaningful.
3. **Historical Comparisons :** One of the easiest and most popular ways of evaluating the performance of the firm is to compare its present ratios with the past ratios called comparison over time.
4. **Projected Ratios :** Ratios can also be calculated for future standard based upon the projected financial statements. Ratio calculation on actual financial statements can be used for comparison with the standard ratios to find out variance, if

any. Such variance helps in interpreting and taking corrective action for improvement in future.

5. **Inter-firm Comparison :** Ratios of one firm can also be compared with the ratios of some other selected firms in the same industry at the same point of time.

13.4 MANAGERIAL USES OF RATIO ANALYSIS

The following are the important managerial uses of ratio analysis –

1. *Helps in Financial Forecasting :* Ratio analysis is very helpful in financial forecasting. Ratios relating to past sales, profits and financial position form the basis for setting future trends.

2. *Helps in Comparison :* With the help of ratio analysis, ideal ratios can be composed and they can be used for comparing a firm's progress and performance. Inter-firm comparison or comparison with industry averages is made possible by the ratio analysis.

3. *Financial Solvency of the Firm :* Ratio analysis indicates the trends in financial solvency of the firm. Solvency has two dimensions-long-term solvency and short-term solvency. Long-term solvency refers to the financial viability of a firm and it is closely related with the existing financial structure. On the other hand, short-term solvency is the liquidity position of the firm. With the help of ratio analysis conclusions can be drawn regarding the firm's liquidity and long-term solvency position.

4. *Evaluation of Operating Efficiency :* Ratio analysis throws light on the degree of efficiency in the management and utilisation of its assets and resources. Various activity ratios measure this kind of operational efficiency and indicate the guidelines for economy in costs, operations and time.

5. *Communication Value :* Different financial ratios communicate the strength and financial standing of the firm to the internal and external parties. They indicate the over-all profitability of the firm.

6. *Others Uses :* Financial ratios are very helpful in the diagnosis of financial health of a firm. They highlight the liquidity, solvency, profitability and capital gearing etc. of the firm.

13.5 DRAWBACKS OF RATIO ANALYSIS

1. **Limited use of a single ratio :** Ratio can be useful only when they are computed in a sufficient large number. A single ratio would not be able to convey

anything. At the same time, if too many ratios are calculated, they are likely to confuse instead of revealing any meaningful conclusion.

2. Effect of inherent limitations of accounting : Because ratios are computed from historical accounting records, so they also possess those limitations and weaknesses as accounting records possess.

4. Lack of proper standards : While making comparisons, it is always a challenging job to find out an adequate standard. It is not possible to calculate exact and well accepted absolute standard, so a quality range is used for this purpose. If actual performance is within this range, it may be regarded as satisfactory.

5. Past is not indicator of future : It is not always possible to make future estimates on the basis of the past as it always does not come true.

6. No allowance for change in price level : While making comparisons of ratios, no allowance for changes in general price level is made. A change in price level can seriously affect the validity of comparisons of ratios computed for different time periods.

7. Difference in definitions : Comparisons are also made difficult due to differences in definitions of various financial terms. The terms like gross profit, net profit, operating profit etc. have not precise definitions and an established procedure for their computation.

8. Window Dressing : Financial statements can easily be window dressed to present a better picture of its financial and profitability position to outsiders. Hence one has to be careful while making decision on the basis of ratios calculated from such window dressing made by a firm.

9. Personal Bias : Ratios are only means of financial analysis and is not an end in itself. Ratios have to be interpreted carefully because the same ratio can be looked at, in different ways.

13.6 CLASSIFICATION OF RATIOS

Ratios can be classified into five broad groups : (i) Liquidity ratios (ii) Activity ratios (iii) Leverage/Capital structure ratios (iv) Coverage ratios (v) Profitability ratios.

13.6.1 Liquidity Ratios : Liquidity refers to the ability of a firm to meet its current obligations as and when they become due. The importance of adequate liquidity in

the sense of the ability of a firm to meet current/short-term obligations when they become due for payment can hardly be overstressed. In fact, liquidity is a prerequisite for the very survival of a firm.

The ratios which indicate the liquidity of a firm are (i) net working capital, (ii) current ratio, (iii) acid test/quick ratio, (iv) super quick ratio, (v) basic defensive interval.

1. Net Working Capital : The first measurement of liquidity of a firm is to compute its Net Working capital (NWC). NWC is really not a ratio, it is frequently employed as a measure of a company's liquidity position. NWC represents the excess of current assets over current liabilities. A firm should have sufficient NWC in order to be able to meet the claims of the creditors and the day-to-day needs of business. The greater the amount of NWC, the greater the liquidity of the firm. Inadequate working capital is the first sign of financial problems for a firm. It is useful for purposes of internal control also.

$$\text{NWC} = \text{Total Current Assets} - \text{Total Current Liabilities}$$

Illustration 1. : The following data has been given in respect of two general insurance firms. Calculate their NWC and comment upon the liquidity position.

	Company X	Company Y
Total Current Assets	Rs. 2,80,000	Rs. 1,30,000
Total Current Liabilities	Rs. 2,20,000	Rs. 1,10,000

Solution :

$$\text{NWC} = \text{TCA} - \text{TCL}$$

$$\text{Company X : Rs. 2,80,000} - \text{Rs. 2,20,000} = \text{Rs. 60,000.}$$

$$\text{Company Y : Rs. 1,30,000} - \text{Rs. 1,10,000} = \text{Rs. 20,000.}$$

X company has three times NWC in comparison to Y company, hence it is more liquid. However, the size of NWC alone is not an appropriate measure of the liquidity position of a firm. The composition of current assets is also important in this respect.

2. Current Ratio : Current ratio is the most common ratio for measuring liquidity. Being related to working capital analysis, it is also called the working capital ratio. The current ratio is the ratio of total current assets to total current liabilities.

$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

As a measure of short-term financial liquidity, it indicates the rupees of current assets available for each rupee of current liability. The higher the current ratio, the larger the amount of rupees available per rupee of current liability, the more the firm's ability to meet current obligations and the greater the safety of funds of short-term creditors. If the result is greater than 1, the firm presumably has sufficient current assets to meet its current liabilities. A ratio of 2:1 (two times current assets of current liabilities) is considered satisfactory as a rule of thumb. Thus, a good current ratio, in a way, provides a margin of safety to the creditors.

3. Acid-Test/Quick Ratio : One defect of the current ratio is that it fails to convey any information on the composition of the current assets of a firm. A rupee of cash is considered equivalent to a rupee of inventory or receivables. But it is not so. A rupee of cash is more readily available to meet current obligations than a rupee of, say, inventory. This impairs the usefulness of the current ratio. The acid-test ratio is a measure of liquidity designed to overcome this defect of the current ratio. It is often referred to as quick ratio because it is a measurement of a firm's ability to convert its current assets quickly into cash in order to meet its current liabilities. Thus, it is a measure of quick or acid liquidity.

$$\text{Acid-test ratio} = \frac{\text{Quick assets}}{\text{Current liabilities}}$$

The term quick assets refers to current assets which can be converted into cash immediately or at a short notice without diminution of value. Included in this category of current assets are (i) cash and bank balances; (ii) short-term marketable securities and (iii) debtors/receivables. Thus, the current assets which are excluded are : prepaid expenses and inventory. The exclusion of inventory is based on the reasoning that it is not easily and readily convertible into cash. Prepaid expenses by their very nature are not available to pay off current debts. An acid-test ratio of 1:1 or greater is recommended.

4. Cash-Position Ratio or Super-Quick Ratio : It is a variant of Quick ratio. When liquidity is highly restricted in terms of cash and cash equivalents, this ratio should be calculated. It is calculated by dividing the super-quick current assets by the current liabilities of a firm. The super-quick current assets are cash and marketable securities. It can be calculated as below :

$$\text{Cash-Position Ratio} = \frac{\text{Cash + Marketable Securities}}{\text{Current Liabilities}}$$

Illustration 2 : From the following information regarding current assets and current liabilities of a firm, comment upon the liquidity of the concern :

Current Assets :	Rs.
Cash	50,000
Debtors	20,000
Bills Receivables	15,000
Stock	35,000
Investment in Govt. Securities	25,000
Prepaid Expenses	10,000
	<u>1,55,000</u>
Current Liabilities :	
Trade Creditors	27,000
Bills Payable	12,000
Outstanding Expenses	5,000
Provision for Taxation	18,000
Bank Overdraft	10,000
	<u>72,000</u>

Solution :

$$\begin{aligned}
 (1) \quad \text{Current Ratio} &= \frac{\text{Current Assets}}{\text{Current Liabilities}} = \frac{155000}{72,000} = 2.15:1 \\
 (2) \quad \text{Quick Ratio} &= \frac{\text{Liquid Assets}}{\text{Current Liabilities}} = \frac{110,000}{72,000} = 1.53:1 \\
 (3) \quad \text{Cash Position Ratio} &= \frac{\text{Cash + Marketable Securities}}{\text{Current Liabilities}} \\
 &= \frac{75,000}{72,000} = 1.04 : 1
 \end{aligned}$$

13.6.2 Activity Ratios

Activity ratios which are also called efficiency ratio or asset utilisation ratios are concerned with measuring the efficiency in asset management. The efficiency with which the assets are used would be reflected in the speed and rapidity with which assets are converted into sales. The greater is the rate of turnover or conversion, the more efficient is the utilisation/management, other things being equal. For this reason, such ratios are also designated as turnover ratios.

1. **Inventory Turnover Ratio :** It is computed as follows :

$$\text{Inventory turnover ratio} = \frac{\text{Cost of goods sold}}{\text{Average inventory}}$$

The cost of goods sold means sales minus gross profit. The average inventory refers to the simple average of the opening and closing inventory. The ratio indicates how fast inventory is sold. A high ratio is good from the viewpoint of liquidity and vice versa. A low ratio would signify that inventory does not sell fast and stays on the shelf or in the warehouse for a long time.

2. **Debtors Turnover Ratio** : This ratio is determined by dividing the net credit sales by average debtors outstanding during the year. Thus,

$$\text{Debtors turnover ratio} = \frac{\text{Net credit sales}}{\text{Average debtors}}$$

Net credit sales consist of gross credit sales minus sales returns, if any, from customers. Average debtors is the simple average of debtors at the beginning and at the end of year. The ratio measures how rapidly debts are collected. A high ratio is indicative of shorter time-lag between credit sales and cash collection. A low ratio shows that debts are not being collected rapidly.

3. **Creditors Turnover Ratio** : It is a ratio between net credit purchases and the average amount of creditors outstanding during the year. It is calculated as follows:

$$\text{Creditors turnover ratio} = \frac{\text{Net credit purchases}}{\text{Average creditors}}$$

Net credit purchases = Gross credit purchases less returns to suppliers

Average creditors = Average of creditors outstanding at the beginning and at the end of the year.

A low turnover ratio reflects liberal credit terms granted by suppliers, while a high ratio shows that accounts are to be settled rapidly.

4. **Average Age of Sundry Debtors** : The average age of sundry debtors (or accounts receivable), or average collection period is more meaningful figure to use in evaluating the firm's credit and collection policies. The main objective of calculating average collection period is to find out cash inflow rate from realisation from debtors. It is found by a simple transformation of the firm's accounts receivable turnover :

$$\text{Average Age of Debtors} = \frac{365}{\text{Debtors Turnover}}$$

It can be calculated as follows also :

$$\text{Average Collection Period} = \frac{\text{Trade Debtors}}{\text{Net Credit Sales}} \times \text{No. of working days}$$

The average of collection period should not exceed the standard or stated credit period in sales terms plus 1/3 of such days. If it happens, it will indicate either liberal credit policy or slackness of management in realising debts or accounts receivable.

Illustration 3 : A manufacturer of stoves sells to retailers on terms 2½% discount in 30 days, 60 days net. The debtors and receivables at the end of December of past two years and net sales for all these two years are as under :

	2000	2001
	Rs.	Rs.
Debtors	33,932	85,582
Bills Receivables	3,686	9,242
Net Sales	3,37,392	4,43,126

Determine the average collection period for both years and comment.

Solution :

Average Collection Period = $\frac{\text{Trade Receivables}}{\text{Net Credit Sales}} \times \text{No. of Working Days}$

$$2000 : \frac{37,618}{3,37,392} \times 365 = 41 \text{ days}$$

$$2001 : \frac{94,824}{4,43,126} \times 365 = 78 \text{ days}$$

Comment : The average collection period in both years has been within standard period, i.e. 80 days (60+ $\frac{1}{3}$ of 60 days), Hence it is good.

Illustration 4 : The comparative statement of income and financial position of a company are given below :

	1999	2000
	Rs.	Rs.
Net Sales	75,000	92,000
Less Cost of Sales	50,000	69,000
Gross Profit	<u>25,000</u>	<u>23,000</u>
Less Operating Expenses (including Rs. 3,000p.a. for Depreciation)	<u>22,000</u>	<u>21,000</u>
Net Profit	<u>3,000</u>	<u>2,000</u>
Cash in hand	6,000	7,000
Debtors	30,000	18,000
Stock at cost	12,000	9,000
Fixed Assets (Net)	<u>51,000</u>	<u>53,000</u>
	<u>99,000</u>	<u>87,000</u>
Creditors and Bills Payable	19,000	10,000
Debentures	20,000	15,000
Share Capital	50,000	58,000
Surplus (earned)	<u>10,000</u>	<u>4,000</u>
	<u>99,000</u>	<u>87,000</u>

During the year 1979, 10% Stock Dividend was declared and paid. The factors for the change in earned surplus during 2000 are, inter-alia, profit and cash dividends.

Compare the following :

- (i) Debtors turnover for two years
- (ii) Liquidity Ratio for two years.
- (iii) Current Ratio for two years.
- (iv) Average collection period assuming all sales as credit sales.
- (v) If desirable current ratio is 3:1 what should be the amount of current liabilities at the end of 2000 ?

Solution :

$$(i) \quad \text{Debtors Turnover} \left(\frac{\text{Trade Receivables}}{\text{Net Credit Sales}} \times 100 \right) \quad \frac{30,000}{75,000} \times 100 = 40\% \quad \left| \quad \frac{18,000}{92,000} \times 100 = 19.56\%$$

$$(ii) \quad \text{Liquidity Ratio} = \text{Liquid Assets/Current Liabilities}$$

$$1999 : \quad 36,000/19,000 = 1.9 :1$$

$$2000 : \quad 25,000/10,000 = 2.5:1$$

$$(iii) \quad \text{Current Ratio} = \text{Current Assets/Current Liabilities}$$

$$1999 : \quad 48,000/19,000 = 2.5:1$$

$$2000 : \quad 34,000/10,000 = 3.4:1$$

$$(iv) \quad \text{Average Collection Period} = \frac{\text{Trade Receivables}}{\text{Net Credit Sales}} \times \text{No. of Working Days}$$

$$1999 : \quad \frac{30,000}{75,000} \times 365 = 146 \text{ days}$$

$$2000 : \quad \frac{18,000}{92,000} \times 365 = 71 \text{ days}$$

(v) As the current assets for 2000 are Rs. 34,000 and the desirable Current Ratio is 3:1, the current liability must be one-third of the current assets, i.e., Current Liabilities = $34,000 \times \frac{1}{3} = \text{Rs. } 11,333$.

5. Assets Turnover Ratio : This ratio is also known as the investment turnover ratio. It is based on the relationship between the cost of goods sold and assets/investments of a firm. A reference to this was made while working out the overall profitability of a firm as reflected in its earning power. Depending upon the different concepts of assets employed, there are many variants of this ratio.

Thus,

1. Total assets turnover = $\frac{\text{Cost of goods sold}}{\text{Average total assets}}$
2. Fixed assets turnover = $\frac{\text{Cost of goods sold}}{\text{Average fixed assets}}$
3. Capital turnover = $\frac{\text{Cost of goods sold}}{\text{Average capital employed}}$
4. Current assets turnover = $\frac{\text{Cost of goods sold}}{\text{Average current assets}}$

Here, the total assets and fixed assets are net of depreciation and the assets are exclusive of fictitious assets like debit balance of profit and loss account and deferred expenditures and so on.

13.6.3 Leverage/Capital Structure Ratios : The second category of financial ratios is leverage ratios. The long-term creditors would judge the soundness of a firm on the basis of the long-term financial strength measured in terms of its ability to pay the interest regularly as well as repay the instalment of the principal on due dates or in lump sum at the time of maturity. The long-term solvency of a firm can be examined by using leverage or capital structure ratios. The leverage ratios may be defined as financial ratios which throw light on the long-term solvency of a firm as reflected in its ability to assure the long-term creditors with regard to (i) periodic payment of interest during the period of the loan and (ii) repayment of principal on maturity or in predetermined installments at due dates.

1. **The Debt-equity Ratio** – This ratio establishes the relationship between the long-term funds provided by creditors and those provided by the firm's owners. It is commonly used to measure the degree of financial leverage of the firm. It is calculated as follows :

$$\text{Debt-equity Ratio} = \frac{\text{Long-term Debts}}{\text{Shareholder's Equity}}$$

Some experts use the following formula to calculate this ratio :

$$\text{Debt-equity Ratio} = \frac{\text{External Equities}}{\text{Internal Equities}}$$

Generally, a ratio of 2:1 is considered satisfactory.

2. **Proprietary Ratio** : This ratio is also known as Shareholders' Equity to Total Equities Ratio or Net Worth to Total Assets Ratio. It indicates the relationship of Shareholders' equity to total assets or total equities. As per formula :

$$\text{Proprietary Ratio} = \frac{\text{Shareholders' Funds}}{\text{Total Assets or Total Equities}}$$

Higher the ratio, better the financial position of the firm.

3. The Solvency Ratio – It is also known as Debt Ratio. It is a difference of 100 and proprietary ratio. It measures the proportion of total assets provided by the firm's creditors. This ratio is calculated as follows :

$$\text{Solvency Ratio (or Debt Ratio)} = \frac{\text{Total Liabilities}}{\text{Total Assets}}$$

Interpretation :

Generally, lower the rate of total liabilities to total assets; more satisfactory or stable is the long-term solvency position of a firm.

4. Fixed Assets to Net Worth Ratio – One of the important aspects of sound financial position of a firm is that its fixed assets are totally financed out of shareholders' funds. If aggregate of fixed assets exceeds the net worth (or proprietors' funds), it proves that fixed assets have been financed with outsiders' funds (or creditors' funds). It may create difficulty in the long-run. This ratio is calculated as follows :

$$\text{Fixed Assets-Net Worth Ratio} = \frac{\text{Fixed Assets (after depreciation)}}{\text{Proprietors' Funds}}$$

This ratio should not exceed 1:1. On the contrary, lower the ratio, better the position. Usually, a ratio of 0.67 : 1 is considered satisfactory.

5. Proprietors' Liabilities Ratio : This ratio indicates the relationship of proprietors' funds to total liabilities. It is calculated as follows :

$$\text{Proprietors' Liabilities Ratio} = \frac{\text{Proprietors' Funds}}{\text{Total Liabilities}}$$

Higher the ratio, better is the position of creditors.

6. Fixed Assets Ratio

A variant to the ratio of fixed assets to net worth is the ratio of fixed assets to all long-term funds which is calculated as :

$$\text{Fixed Assets Ratio} = \frac{\text{Fixed Assets (After depreciation)}}{\text{Total long-term funds}}$$

Interpretation :

This ratio indicates the extent to which the total of fixed assets are financed by long-term funds of the firm. Generally, the total of the fixed assets should be equal to total of the long-term funds or say the ratio should be 100%. And if total long-term funds are more than total fixed assets, it means that part of working capital requirement is met out.

7. Ratio of Current Assets to Proprietary's Funds

The ratio is calculated by dividing the total of current assets by the amount of shareholder's funds. For example, if current assets are Rs. 2,00,000 and shareholder's Funds are Rs. 4,00,000 the ratio of current assets to proprietors funds in terms of percentage would be

$$= \frac{\text{Current Assets}}{\text{Shareholders Funds}} \times 100$$

$$= \frac{2,00,000}{4,00,000} \times 100$$

Interpretation :

This ratio indicates the extent to which proprietors funds are invested in current assets. There is no rule of thumb for this ratio and depending upon the nature of the business there may be different ratios of different firms.

8. Debt-Service Ratio

Net income to debt service ratio or simply debt service ratio is used to test the debt-servicing capacity of a firm. The ratio is also known as interest coverage ratio or fixed charges cover or times interest earned. This ratio is calculated by dividing the net profit before interest and taxes by fixed interest charges.

$$\text{Debt Service or Interest Coverage Ratio} = \frac{\text{Net Profit (before interest and tax)}}{\text{Fixed Interest Charges}}$$

Interpretation

Interest coverage ratio indicates the number of times interest is covered by the profits available to pay the interest charges. Long-term creditors of a firm are interested in knowing the firm's ability to pay interest on their long-term borrowings. Generally, higher the ratio, more safe are long term creditors because even if earnings of the firm fall, the firm shall be able to meet its commitment of fixed interest changes. But a too high interest coverage ratio may not be good for the firm because it may imply that firm is not using debt as a source of finance so as to increase the earnings per share.

Illustration 5 : Extracts from financial account of X, Y, Z Ltd. are given below :

	Year I		Year II	
	Assets Rs.	Liabilities Rs.	Assets Rs.	Liabilities Rs.
Stock	10,000		20,000	
Debtors	30,000		30,000	
Payment in advance	2,000		—	
Cash in hand	20,000		10,000	

Sundry Creditors	25,000	30,000
Acceptances	15,000	12,000
Bank Overdraft	–	5,000
	<u>62,000</u>	<u>47,000</u>

Sales amounted to Rs. 3,50,000 in the first year and Rs. 3,00,000 in the second year.

You are required to comment on the solvency position of the concern with the help of accounting ratios.

Solution :

Short-term Solvency Analysis :

$$(1) \quad \text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

$$\text{Year I} = \frac{10,000 + 30,000 + 2,000 + 20,000}{25,000 + 15,000} = 1.55 : 1$$

$$\text{Year II} = \frac{20,000 + 30,000 + 15,000}{30,000 + 12,000 + 5,000} = 1.38 : 1$$

$$(2) \quad \text{Liquid or Quick Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

$$\text{Year I} = \frac{10,000 + 30,000 + 2,000}{25,000 + 15,000} = 1.30 : 1$$

$$\text{Year II} = \frac{30,000 + 15,000}{30,000 + 12,000} = 1.07 : 1$$

Note : Bank overdraft is not included in liquid liabilities, as it tends to become some sort of a permanent mode of financing.

$$(3) \quad \text{Inventory Turnover Ratio} = \frac{\text{Net Sales}}{\text{Average Inventory}}$$

$$\text{Year I} = \frac{3,50,000}{10,000} = 35:1$$

$$\text{Year II} = \frac{3,00,000}{15,000} = 20:1$$

$$(4) \quad \text{Inventory Current Assets Ratio} = \frac{\text{Inventory}}{\text{Total Current Assets}} \times 100$$

$$\text{Year I} = \frac{10,000}{62,000} \times 100 = 16\%$$

$$\text{Year II} = \frac{20,000}{65,000} \times 100 = 31\%$$

$$(5) \quad \text{Average Collection Period} = \frac{\text{Trade Receivables}}{\text{Net Credit Sales}} \times \text{No. of Working Days}$$

$$\text{Year I} = \frac{30,000}{3,50,000} \times 365 = 31.3 \text{ days}$$

$$\text{Year II} = \frac{30,000}{3,00,000} \times 365 = 36.5 \text{ days}$$

The liquidity position (or short-term solvency) of the company is not sound. The current ratio in the first year, 1.55:1 does not appear to be good enough as it is below the norm of 2:1. In the second year, the position has further deteriorated to 1.38:1. The latter ratio shows a definite weakening in the solvency position of the company. As regards Acid Test Ratio, it is satisfactory in the first year and not alarming in the second year, as it is above the generally accepted standard of 1:1. However, the fall in the cash balance and appearance of bank overdraft in the second year show a definite deterioration in the financial position. Moreover, because of factors concerning sales, stock and debtors, the quick ratio is likely to soon deteriorate.

The inventory turnover ratio, indicates a deterioration in the second year. The disproportionate rise in the percentage of stock of total current assets from 16% in the first year to 31% in the second year is also a matter of concern. This shows over-purchase of materials which needs a thorough investigation.

A comparison of debtors' turnover ratios of the two years indicates worsening of the company's liquid position. There will be much cause of worry, if the sales is only to a few customers.

Long-term Solvency Analysis

$$(1) \quad \text{Debt to Equity Ratio} = \frac{\text{External Equities}}{\text{Internal Equities}}$$

$$\text{Year I} : \frac{25,000 + 15,000}{62,000 - 40,000} = \frac{40,000}{22,000} = 1.82 : 1$$

$$\text{Year II} : \frac{30,000 + 12,000 + 5,000}{65,000 - 47,000} = \frac{47,000}{18,000} = 2.61 : 1$$

$$(2) \quad \text{Proprietary Ratio} = \frac{\text{Shareholders' Equities}}{\text{Total Equities}}$$

$$\text{Year I} = \frac{22,000}{62,000} = 35 : 1$$

$$\text{Year II} = \frac{18,000}{65,000} = 28.1$$

To sum up, the financial position of the company is very unsatisfactory as the debt to equity ratio and proprietary ratio are far off the norm in both the years. The situation has worsened in the second year resulting in a serious decline in the shareholders' equity. The company seems to be heavily banking upon creditors' funds.

The overall conclusion of the above analysis is that the solvency position of the company is not satisfactory and has deteriorated in the second year.

13.6.4 Coverage Ratios : The another category of leverage ratios are coverage ratios. These ratios are computed from information available in the profit and loss account. The coverage ratios measure the relationship between what is normally available from operations of the firms and the claims of the outsiders. The important coverage ratios are as follows :

1. Interest Coverage Ratio : This ratio measures the debt servicing capacity of a firm insofar as fixed interest on long-term loan is concerned. It is determined by dividing the operating profits or earnings before interest and taxes (EBIT) by the fixed interest charges on loans. Thus,

$$\text{Interest coverage} = \frac{\text{EBIT}}{\text{Interest}}$$

From the point of view of the creditors, the larger the coverage, the greater is the ability of the firm to handle fixed-charge capabilities and the more assured is the payment of interest to the creditors. However, too high a ratio may imply unused debt capacity.

2. Dividend Coverage Ratio : It measures the ability of a firm to pay dividend on preference shares which carry a stated rate of return. This ratio is computed as under :

$$\text{Dividend coverage} = \frac{\text{EAT}}{\text{Preference dividend}}$$

The ratio, like the interest coverage ratio, reveals the safety margin available to the preference shareholders. As a rule, the higher the coverage, the better it is from their point of view.

3. Total Coverage Ratio : The total coverage ratio has a wider scope and takes into account all the fixed obligations of a firm, that is, (i) interest on loan, (ii) preference dividend, (iii) Lease payments, and (iv) repayment of principal. Symbolically,

$$\text{Total coverage} = \frac{\text{EBIT} + \text{Lease payment}}{\text{Interest} + \text{Lease payments} + (\text{Preference dividend} + \text{Instalment of principal})/(1-t)}$$

4. Debt-Services Coverage Ratio (DSCR) : This ratio is considered more comprehensive and apt measure to compute debt service capacity of a business

firm. It provides the value in terms of the number of times the total debt service obligations consisting of interest and repayment of principal in installments are covered by the total operating funds, available after the payment of taxes. Symbolically,

$$\text{DSCR} = \frac{\sum_{n=1}^n \text{EAT}_t + \text{Interest}_t + \text{Depreciation}_t + \text{OA}_t}{\sum_{n=1}^n \text{Instalment}_t}$$

The higher the ratio, the better it is. In general, lending financial institutions consider 2:1 as satisfactory ratio.

13.6.5 Profitability Ratios : Apart from the creditors, also interested in the financial soundness of a firm are the owners and management or the company itself. The management of the firm is naturally eager to measure its operating efficiency. Similarly, the owners invest their funds in the expectation of reasonable returns. Profitability ratios can be determined on the basis of either sales or investments.

1. Profitability Ratios Related to Sales : These ratios are based on the premise that a firm should earn sufficient profit on each rupee of sales. These ratios consist of (1) profit margin, and (2) expenses ratio.

(i) Gross Profit Margin :

Illustration 6 : Calculate the Gross Profit Ratio from the following figures :

Sales	Rs. 1,00,000	Purchases	Rs. 60,000
Sales Returns	10,000	Purchases Returns	15,000
Opening Stock	20,000	Closing Stock	5,000

Solution :

$$\begin{aligned} \text{Gross Profit Ratio} &= \frac{\text{Gross Profit}}{\text{Net Sales}} \times 100 \\ &= \frac{\text{Net Sales} - \text{Cost of Goods sold}}{\text{Net Sales}} \times 100 \\ &= \frac{\text{Rs. 90,000} - \text{Rs. 60,000}}{\text{Rs. 90,000}} \times 100 \\ &= \frac{\text{Rs. 30,000}}{\text{Rs. 90,00}} \times 100 = 33.33\% \end{aligned}$$

A high ratio of gross profit to sales is a sign of good management as it implies that the cost of production of the firm is relatively low. It may also be indicative of a higher sales price without a corresponding increase in the cost of goods sold.

A relatively low gross margin is definitely a danger signal, warranting a careful and detailed analysis of the factors responsible for it.

(ii) Net profit margin is also known as net margin. This measures the relationship between net profits and sales of a firm. Depending on the concept of net profit employed, this ratio can be computed in two ways :

1. Operating profit ratio = $\frac{\text{Earnings before interest and taxes (EBIT)}}{\text{Sales}}$
2. Net profit ratio = $\frac{\text{Earnings after interest and taxes (EAT)}}{\text{Sales}}$

This ratio is indicative of management's ability to operate the business with sufficient success not only to recover from revenues of the period, the cost of merchandise or services, the expenses of operating the business (including depreciation) and the cost of the borrowed funds, but also to leave a margin of reasonable compensation to the owners for providing their capital at risk. The ratio of net profit (after interest and taxes) to sales essentially expresses the cost price effectiveness of the operation.

A high net profit margin would ensure adequate return to the owners.

2. **Expenses Ratio :** Another profitability ratio related to sales is the expenses ratio. It is computed by dividing expenses by sales.

1. Cost of goods sold ratio = $\frac{\text{Cost of goods sold}}{\text{Net sales}} \times 100$
2. Administrative expenses ratio = $\frac{\text{Administrative expenses}}{\text{Net sales}} \times 100$
3. Selling expenses ratio = $\frac{\text{Selling expenses}}{\text{Net sales}} \times 100$
4. Operating ratio = $\frac{\text{Cost of goods sold} + \text{Operating expenses}}{\text{Net sales}} \times 100$

The expenses ratio should be compared over a period of time with the industry average as well as firms of similar type. As a working proposition, a low ratio is favourable, while a high one is unfavourable.

3. **Rate of Return on Equity Share Capital :** This ratio is calculated by dividing the net profits (after deducing income-tax and dividend on preference share capital) by the paid up amount of equity share capital. It is usually expressed in percentage as below :

$$\text{Rate of Return of Equity Share Capital} = \frac{\text{Net Profit (after tax and Pref. Div.)}}{\text{Paid-up Equity Share Capital}} \times 100$$

This ratio examines the earning capacity of equity share capital.

4. Return on Proprietors Funds on Return on Net Worth : Some experts suggest to calculate return on net worth instead of calculating return on equity share capital. The proprietors funds or net worth represents the total interest of shareholders which include share capital (whether equity or preference) and all accumulated profits. Alternatively, proprietors' funds may be taken equal to fixed assets plus current assets minus all outside liabilities both long-term and current. This ratio may be calculated as under :

$$\text{Return on Proprietors' Funds} = \frac{\text{Net Profits (less taxes)}}{\text{Proprietors' Funds}}$$

This ratio helps the proprietors and potential investors to judge the earning of the company in relation to others and the adequacy of the return on proprietors' funds.

5. Return on Investment (ROI) Ratio : This is one of the key profitability ratios. It examines the overall operating efficiency or earning power of the company in relation to total investment in business. It indicates the percentage of return on the capital employed in the business. It is calculated on the basis of the following formula :

$$\frac{\text{Operating Profit}}{\text{Capital Employed}} \times 100$$

The term capital employed has been given different meanings by different accountants. Some of the popular meanings are as follows :

- (i) Sum-total of all assets whether fixed or current.
- (ii) Sum-total of fixed assets
- (iii) Sum-total of long-term funds employed in the business, i.e.,

Share Capital + Reserves and Surplus + Long term Loans + Non-business Assets + Fictitious Assets

In management accounting the term capital employed is generally used in the meaning given in the point third above.

The term Operating Profit means Profit before Interest and Tax. The term Interest means Interest on long-term Borrowings. Interest on short-term borrowings will be deducted for computing operating profit. Non-trading incomes such as interest on Government securities or non-trading losses or expenses such as loss on account of fire, etc. will also be excluded.

The computation of ROI can be understood with the help of the following illustration:

Illustration 7 : From the following figures extracted from the Income Statement and Balance Sheet of Anu Sales Pvt. Ltd., calculate the Return on Total Capital employed (ROI) :

Particulars	Amount Rs.	Particulars	Amount Rs.
Fixed Assets	4,50,000	Reserves	1,00,000
Current Assets	1,50,000	Debentures	1,00,000
Investment in Govt. Securities	1,00,000	Income from Investments	10,000
Sales	5,00,000	Interest on Debentures at 10%	
Cost of goods sold	3,00,000	Provision for tax at 50% of	
Share Capital :		Net Profits	
10% Preference	1,00,000		
Equity	2,00,000		

Solution : It will be appropriate to prepare the Profit and Loss Account and the Balance Sheet of the company before computation of the returns on capital employed.

Anu Sales Pvt. Limited

Profit and Loss Account

Particulars	Amount Rs.	Particulars	Amount Rs.
To Cost of goods sold	3,00,000	By Sales	5,00,000
To Interest on Debentures	10,000	By Income form Investments	10,000
To Provision for Taxation	1,00,000		
To Net profit after tax	1,00,000		
	5,10,000		5,10,000

Balance Sheet as on

Liabilities	Rs.	Assets	Rs.
Share Capital		Fixed Assets	1,50,000
10% Preference	1,00,000	Current Assets	1,50,000
Equity	2,00,000	Investment in govt. Securities	1,00,000
Reserves	1,00,000		
10% Debentures	1,00,000		
Profit and Loss Account	1,00,000		
Provision for Taxation	1,00,000		
	7,00,000		7,00,000

$$\text{Return on total capital employed} = \frac{\text{Net operating profit before interest and tax}}{\text{Total capital employed}}$$

$$\begin{aligned}
 &= \frac{2,00,000}{5,00,000} \times 100 \\
 &= 40\% \\
 \text{Net Operating Profit} &= \text{Net Profit} + \text{Provision for Tax} - \text{Income from} \\
 &\quad \text{Investments} + \text{Interest on Debentures} \\
 &= \text{Rs. } 1,00,000 + \text{Rs. } 1,00,000 - \text{Rs. } 10,000 + \text{Rs. } 10,000 \\
 &= \text{Rs. } 2,00,000 \\
 \text{Capital employed} &= \text{Fixed Assets} + \text{Current Assets} - \text{Provision for Tax} \\
 &= \text{Rs. } 4,50,000 + \text{Rs. } 1,50,000 - \text{Rs. } 1,00,000 \\
 &= \text{Rs. } 5,00,000 \\
 \text{Or} &= \text{Share Capital} + \text{Reserves} + \text{Debentures} + \text{Profit \& Loss} \\
 &\quad \text{Account Balance} - \text{Investment in Govt. Securities} \\
 &= \text{Rs. } 3,00,000 + \text{Rs. } 1,00,000 + \text{Rs. } 1,00,000 + \\
 &\quad \text{Rs. } 1,00,000 - \text{Rs. } 1,00,000 \\
 &= \text{Rs. } 5,00,000
 \end{aligned}$$

Significance of ROI : The Return on Capital invested is a concept that measures the profit which a firm earns on investing a unit of capital. Yield on capital is another term employed to express the idea. It is desirable to ascertain this periodically. The profit being the net result of all operations, the return on capital expresses all efficiencies or inefficiencies of a business collectively and thus is a dependable basis for judging its overall efficiency or inefficiency. On this basis, there can be comparison of the efficiency of one department with that of another or one plant with that another, one company with that of another and one industry with that of another. For this purpose, the amount of profits considered is that before making deductions on account of interest, income-tax and dividends and capital is the aggregate of all the capital at the disposal of the company, viz., equity capital, preference capital, reserve, debentures, etc.

The Return on Capital when calculated in this manner would also show whether the company's borrowing policy was wise economically and whether the capital had been employed fruitfully. Suppose, funds have been borrowed at 8% and the Return on Capital is 7½% it would have been better not to borrow (unless borrowing was vital for survival). It would also show that the firm had not been employing the funds efficiently.

Limitations of ROI : ROI is one of the very important measures for judging the overall financial performance of a firm. However, it suffers from certain important limitations. These limitations are :

(i) **Manipulation is possible :** ROI is based on earnings and investments. Both these figures can be manipulated by management by adopting varying accounting policies regarding depreciation, inventory valuation, treatment of provisions, etc.

The decision in respect of most of these matters is arbitrary and subject to whims of the management.

(ii) **Different bases for computation of Profit and Investments :** There are different bases for calculating both profit and investment as explained in the preceding pages. For example, fixed assets may be taken at gross or net values, earnings may be taken before or after tax, etc.

(iii) **Emphasis on short-term profit :** ROI emphasises the generation of short-term profits. The firm may achieve this objective by cutting down cost such as those on research and development or sales promotion. Cutting down of such costs without any justification may adversely affect the profitability of the firm in the long run, though ROI may indicate better performance in the short run.

(iv) **Poor Measure :** ROI is a poor measure of a firm's performance since it is also affected by many extraneous and non-controllable factors.

6. Return on Capital Employed (ROCE) : The ROCE is the second type of ROI. It is similar to the ROA except in one respect. Here the profits are related to the total capital employed. The term capital employed refers to long-term funds supplied by the creditors and owners of the firm. The higher the ratio, the more efficient is the use of capital employed.

The ROCE can be computed in different ways as shown below :

$$1. \quad \text{ROCE} = \frac{\text{Net profit after taxes/EBIT}}{\text{Average total capital employed}} \times 100$$

$$2. \quad \text{ROCE} = \frac{\text{Net profit after taxes} + \text{Interest} + \text{Tax advantage on interest}}{\text{Average total capital employed}} \times 100$$

(7) **Earning Per Share (EPS)** measures the profit available to the equity shareholders on a per share basis, that is, the amount that they can get on every share held. It is calculated by dividing the profits available to the shareholders by the number of the outstanding shares. The profits available to be the ordinary shareholders are represented by net profits after taxes and preference dividend. Thus,

$$\text{EPS} = \frac{\text{Net profit available to equity holders}}{\text{Number of ordinary shares outstanding}}$$

8. Divided Per Share (DPS) is the dividends paid to shareholders on a per share basis. In other words, DPS is the net distributed profit belonging to the shareholders divided by the number of ordinary shares outstanding. That is,

$$\text{DPS} = \frac{\text{Dividend paid to ordinary shareholders}}{\text{Number of ordinary shares outstanding}}$$

The DPS would be a better indicator than EPS as the former shows what exactly is received by the owners.

9. Divided-Pay Out (D/P) Ratio : This is also known as pay-out ratio. It measures the relationship between the earnings belonging to the ordinary shareholders and the dividend paid to them. In other words, the D/P ratio shows what percentage share of the net profits after taxes and preference dividend is paid out as dividend to the equity holders.

$$\text{D/P} = \frac{\text{Dividend per ordinary share (DPS)}}{\text{Earnings per share (EPS)}} \times 100$$

If the D/P ratio is subtracted from 100, it will give that percentage share of the net profits which are retained in the business.

10. Earnings and Dividend Yield : This ratio is closely related to the EPS and DPS. While the EPS and DPS are based on the book value per share, the yield is expressed in terms of the market value per share.

This ratio is calculated as follows :

$$1. \quad \text{Earning yield} = \frac{\text{EPS}}{\text{Market value per share}} \times 100$$

$$2. \quad \text{Dividend yield} = \frac{\text{DPS}}{\text{Market value per share}} \times 100$$

The earning yield is also called the earning-price ratio

Price Earnings (P/E) Ratio is closely related to the earnings yield/earnings price ratio. It is actually the reciprocal of the latter. This ratio is computed by dividing the market price of the shares by the EPS. Thus,

$$\text{P/E ratio} = \frac{\text{Market price of share}}{\text{EPS}}$$

The P/E ratio reflects the price currently being paid by the market for each rupee of currently reported EPS. In other words, the P/E ratio measures investors' expectations and the market appraisal of the performance of a firm.

13.7 SUMMARY

Ratio analysis is a widely-used tool of financial analysis. The rationale of ratio analysis lies in the fact that it makes related information comparable. A single

figure by itself has no meaning but when expressed in terms of a related figure, it yields significant inferences. Ratio analysis helps in financial forecasting, in making comparisons, in evaluating solvency position of a firm, etc.

Ratios can be classified into five broad groups : (i) Liquidity ratios (ii) Activity ratios (iii) Long-term solvency/capital structure/leverage ratios (iv) coverage ratios (v) Profitability ratios. In life insurance area, the ratios are calculated for each operating unit i.e. each branch office, each divisional office (consolidated for division as a whole), each zonal office (consolidated for zone as a whole) and for the corporation as a whole. Ratios are calculated for two or more than two years and compared; then they are compared with other units, and even with the corporate ratios , and interpreted and based on the indications received, corrective action is taken. Sometimes some of the ratios are calculated monthly for observing the trend of movement in various indices, and for taking remedial action promptly.

13.8 KEYWORDS

Ratio: A ratio is simply one number expressed in terms of another.

Liquidity ratios: Liquidity ratios are used to test the short-term solvency position of the business.

Activity ratios: Activity ratios are concerned with measuring the efficiency in asset management.

Profitability ratios: These indicate the profit earning capacity of a business.

Leverage ratios: There are financial ratios which throw light on the long-term solvency of a firm as reflected in its ability to assure the long-term creditors with respect to periodic payment of principal as well as interest.

13.9 SELF ASSESSMENT QUESTIONS

1. Discuss the significance of any three of the following ratios to financial analyst :
 - (a) Current Ratio
 - (b) Liquidity Ratio
 - (c) Net Profit to Capital Employed Ratio
 - (d) Debt Equity Ratio
2. State the meaning of expression "Return on Capital Employed" and point out the advantages the business would derive from its use.
3. Ratios like statistics have a set of principles and finality about them which at times may be misleading." discuss with illustrations.
4. Discuss the importance of ratio analysis for inter-firm and intra-firm comparison including circumstances responsible for its limitations, if any.

5. "The study of financial analysis is simply memorising a bunch of ratios and gives the students very little opportunity for creative problem solving." Do you agree with it ? Explain.
6. Discuss in detail and with illustrations the limitations of ratio analysis.
7. What do you understand by 'Ratio Analysis'? What are its objects? Discuss the role of three important ratios to the management.
8. Discuss some of the important ratios usually worked from financial statements showing how they would be useful to higher management.
9. What is Profitability and how is it measured? Which of the accounting ratios serve as indication of profitability and how are they computed ?
- 10 From the following information of a textile company complete the proforma balance sheet if its sales are Rs. 32,00,000.

Sales to Net worth		2.3 times
Current Debt to Net Worth	42%	
Total Debt to Net Worth		75%
Current Ratio		2.9 times
Net Sales to Inventory		4.7 times
Average Collection Period		64 days
Fixed Assets to Net Worth		53.2%

Proforma Balance Sheet

Net Worth	?	Fixed Assets	?
Long-term Debt	?	Cash	?
Current Debt	?	Stock	?
		Sundry Debtors	?

11. From the following informations given below find out Debtors Turnover for each year :

	2000	2001
	Rs.	Rs.
Net Credit Sales	26,809	29,836
Total Debtors	5,644	6,089

If the Company increases its debtors turnover for the year 2001 to 6 times, what would be the impact on profitability.

(Ans. 2000 – 4.75 times; 2001 – 4.90 times. If debtors turnover for 2001 increases to 6 times, working capital needs of the Company will be reduced by Rs. 1,116. Assuming the cost of funds employed in debtors at 10%, the company will save Rs. 111.60. Besides loss from bad debts will also be reduced due to decrease in debtors).

12. From the following information, calculate average collection period :

	Rs.		Rs.
Total sales	1,05,000	Stock at the end	3,000
Sales Returns	5,000	Debtors at the end	3,000
Credit sales	60,000	B/R at the end	3,650
B/P at the end	3,000	Creditors at the end	7,000
Credit purchases	75,000	Provision for doubtful debt	15%

Also calculate number of days purchases in payables. Assume 360 days in a year.

(Ans. 43.5 days, 48 day)

13. From the following Balance Sheet of Company A, you are required to calculate : (a) Solvency Ratio (b) Liquidity Ratio

Balance Sheet of Company A

Liabilities	Rs.	Assets	Rs.
Share Capital	5,00,000	Fixed Assets	6,00,000
Fixed Liabilities	2,50,000	Current Assets	4,00,000
Current Liabilities	2,50,000		
	10,00,000		10,00,000

[(Ans. (a) 5:1; (b) 1.6:1]

14. The Capital of Everest Co. Ltd. is as follows :

	Rs.
9% Preference Shares of Rs. 10 each	3,00,000
Equity Shares of Rs. 10 each	8,00,000
	11,00,000

The accountant has ascertained the following information :

	Rs.
Profit after tax at 60 per cent	2,70,000
Depreciation	60,000
Equity Dividend Paid	20 per cent
Market Price of Equity Shares	Rs. 40

(You are required to state the following, showing the necessary workings :

- (a) The dividend yield on the Equity Shares.
- (b) The cover for the Preference and Equity dividends.
- (c) The earnings per share.
- (d) The price-earnings ratio.
- (e) The net cash flow

13.10 SUGGESTED READINGS

1. Nigam, B.M. Lall and Jain, I.C.; *Cost Accounting*, PHI, New Delhi.
2. Pau,, S.Kr.; *Management Accounting*, Central Book Agency, Calcutta.
3. Khan, M.Y. and Jain, P.K.; *Financial Management*, Tata McGraw, New Delhi.
4. Maheshwari, S.N.; *Management Accounting and Financial Control*.

Subject : Accounting for Managers

Updated by: Dr. Mahesh Chand Garg

Course Code : CP-104

Lesson No. : 14

**ANALYSIS AND INTERPRETATION OF FINANCIAL
STATEMENTS : FUNDS FLOW STATEMENT**

STRUCTURE

- 14.0 Objective
- 14.1 Introduction
- 14.2 Meaning of Funds
- 14.3 Meaning of Flow of Funds
- 14.4 Funds Flow Statement
- 14.5 Hidden Transactions
- 14.6 Difference Between Funds Flow Statement and Income Statement
- 14.7 Uses of Funds Flow Statement
- 14.8 Limitations of Funds Flow Statement
- 14.9 Summary
- 14.10 Keywords
- 14.11 Self Assessment Questions
- 14.12 Suggested Readings

14.0 OBJECTIVE

After studying this lesson, you will be able to know :

- (a) Meaning of Funds, Flow of Funds and Funds Flow Statement.
- (b) Preparation of Funds Flow Statement.
- (c) Uses and Limitations of Funds Flow Statement.

14.1 INTRODUCTION

The basic financial statements, i.e., the Balance Sheet and Profit and Loss Account or Income Statement of business, reveal the net effect of the various

transactions on the operational and financial position of the company. The Balance Sheet gives a summary of the assets and liabilities of an undertaking at a particular point of time. It reveals the financial status of the company. The assets side of a Balance Sheet shows the deployment of resources of an undertaking while the liabilities side indicates its obligations, i.e., the manner in which these resources were obtained. The Profit and Loss Account reflects the results of the business operations for a period of time. It contains a summary of expenses incurred and the revenue realised in an accounting period. Both these statements provide the essential basic information on the financial activities of a business, but their usefulness is limited for analysis and planning purposes. The Balance Sheet gives a static view of the resources (liabilities) of a business and the uses (assets) to which these resources have been put at a certain point of time. It does not disclose the causes for changes in the assets and liabilities between two different points of time. The Profit and Loss Account, in a general way, indicates the sources provided by operations. But there are many transactions that take place in an undertaking and which do not operate through Profit and Loss Account. Thus, another statement has to be prepared to show the change in the assets and liabilities from the end of one period of time to the end of another period of time. The statement is called a Statement of Changes in Financial Position or a Funds Flow Statement.

The Funds Flow Statement is a statement which shows the movement of funds and is a report of the financial operations of the business undertaking. It indicates various means by which funds were obtained during particular period and the ways in which these funds were employed. In simple words, it is a statement of sources and applications of funds.

14.2 MEANING OF FUNDS

The term 'funds' has been defined in a number of ways :

- (a) **In a narrow sense**, it means cash and a Funds Flow Statement prepared on this basis is called a cash flow statement. Such a statement enumerates net effects of the various business transactions on cash and takes into account receipts and disbursements of cash.
- (b) **In a broader sense**, the term 'funds' refers to money values in whatever form it may exist. Here funds means all financial resources, used in business whether in the form of men, material, money, machinery and others.
- (c) **In a popular sense**, the term 'funds' means working capital, i.e., the excess of current assets over current liabilities. The working capital concept of funds has emerged due to the fact that total resources of a business are invested partly in fixed assets in the form of fixed capital and partly kept in form of liquid or near liquid form as working capital.

The concept of funds as working capital is the most popular one and in this lesson we shall refer to 'funds' as working capital.

14.3 MEANING OF FLOW OF FUNDS

The term 'flow' means movement and includes both 'inflow' and 'outflow'. The term 'flow of funds' means transfer of economic values from one asset or equity to another. Flow of funds is said to have taken place when any transaction makes changes in the amount of funds available before happening of the transaction. If the effect of transaction results in the increase of funds, it is called a source of funds and if it results in the decrease of funds, it is known as an application of funds. Further, in case the transaction does not change funds, it is said to have not resulted in the flow of funds. According to the working capital concept of funds, the term 'flow of funds' refers to the movement of funds in the working capital. If any transaction results in the increase in working capital, it is said to be a source or inflow of funds and if it results in the decrease of working capital, it is said to be an application or outflow of funds.

Rule of Flow of Funds

The flow of funds occurs when a transaction changes on the one hand a non-current account and on the other a current account and vice-versa.

When a change in a non-current account e.g., fixed assets, long-term liabilities, reserves and surplus, fictitious assets, etc., is followed by a change in another non-current account, it does not amount to flow of funds. This is because of the fact that in such cases neither the working capital increases nor decreases. Similar, when a change in one current account results in a change in another current account, it does not affect funds. Funds move from non-current to current transactions or vice-versa only. In simple language funds move when a transaction affects (i) current asset and a fixed asset, or (ii) a fixed and a current liability, or (iii) a current asset and a fixed liability, or (iv) a fixed liability and current liability; and funds do not move when the transaction affects fixed assets and fixed liability or current assets and current liabilities.

Examples

(a) Transactions which involve only the current accounts and hence do not result in the flow of funds

1. Cash collected from debtors.
2. Bills receivables realised.
3. Cash paid to creditors.
4. Payment or discharge of bills payable.
5. Issued bills payable to trade creditors.
6. Received acceptances from customers.
7. Raising of short-term loans.
8. Sale of purchased for cash or credit.
9. Goods purchased for cash or credit.

(b) Transactions which involve only non-current accounts and hence do not result in the flow of funds

1. Purchase of one new machine in exchange of two old machines.
2. Purchase of building or furniture in exchange of land.
3. Conversion of debentures into shares.
4. Redemption of preference shares in exchange of debentures.
5. Transfers to General Reserves, etc.
6. Payment of bonus in the form of shares.
7. Purchase of fixed assets in exchange of shares, debentures, bonds or long-term loans.
8. Writing off of fictitious assets.
9. Writing off a accumulated losses or discount on issue of shares, etc.

(c) Transactions which involve both current and non-current accounts and hence result in the flow of funds

1. Issue of shares for cash.
2. Issue of debentures for cash.
3. Raising of long-term loans.
4. Sale of fixed assets on cash or credit.
5. Sale of trade investments.
6. Redemption of Preference shares.
7. Redemption of debentures.
8. Purchase of fixed assets on cash or credit.
9. Purchase of long-term/trade investments.
10. Payment of bonus in cash.
11. Repayment of long-term loans.
12. Issue of shares against purchase of stock-in-trade.

14.4 FUNDS FLOW STATEMENT

The Funds Flow Statement is a financial statement which reveals the methods by which the business has been financed and how it has used its funds between the opening and closing Balance Sheet dates. According to Anthony, "The Funds Flow Statement describe the sources from which additional funds were derived and the uses to which these funds were put". The analysis of such statements over periods of time clearly shows the sources from which past activities have been financed and brings to highlight the uses to which such funds have been put. The statement is known by various titles, such as, Statement of Sources and Applications of Funds, Statement of Changes in Working Capital, Where Got and Gone Statement and Statement of Resources Provided and Applied.

Objectives of Funds Flow Statement

Generally a business prepares two financial statements i.e., Balance Sheet and Profit and Loss Account. The former reflects the state of assets and liabilities of a company on a particular date whereas the latter tells about the result of operations of the company over a period of a year. These financial statements have great utility but they do not reveal the movement of funds during the year and their consequent effect on its financial position. For example, a company which has made substantial profits during the year, may discover to its surprise that there are not enough liquid funds to pay dividend and income tax because of profits tied up in other assets, and is always after the bank authorities to get the cash credit or bank overdraft facility. In order to remove this defect, another statement known as Funds Flow Statement is prepared. The main purposes of such statement are :

- (i) To help to understand the changes in assets and asset sources which are not readily evident in the Income Statement or the financial position statement.
- (ii) To inform as at how the loans to the business have been used, and
- (iii) To point out the financial strengths and weaknesses of the business.

Procedure for Preparing a Funds Flow Statement

Funds flow statement is a method by which we study changes in the financial position of a business enterprise between beginning and ending financial statements dates. Hence, the Funds Flow Statement is prepared by comparing two Balance Sheets and with the help of such other information derived from the accounts as may be needed. Broadly speaking, the preparation of a Funds Flow Statement consists of following two parts :

1. Statement or Schedule of Changes in Working Capital
2. Statement of Sources and Application of Funds

1. Statement or Schedule of Changes in Working Capital

Working Capital means the excess of current assets over current liabilities. Statement of changes in working capital is prepared to show the changes in the working capital between the two Balance Sheet dates. This statement is prepared with the help of current assets and current liabilities derived from the two Balance Sheets.

The changes in the amount of any current asset or current liability in the current Balance Sheet as compared to that of the previous Balance Sheet either results in increase or decrease in working capital. The difference is recorded for each individual current asset and current liability. In case a current asset in the current period is more than in the previous period, the effect is an increase in working capital and it is recorded in the increase column. But if a current liability in the current period is more than in the previous period, the effect is decrease in working capital and it is recorded in the decrease column or vice versa. The total increase and the total decrease are compared and the difference shows the net increase or net decrease in working capital. It is worth noting that schedule of changes in working capital is prepared only from current assets and current liabilities and the other information is not of any use for preparing

this statement. A typical form of statement or schedule of changes in working capital is as follows :

Statement or Schedule of Changes in Working Capital

Particulars	Previous Year	Current Year	Effect on Working Capital	
			Increase	Decrease
<i>Current Assets :</i>				
Cash in hand				
Cash at bank				
Bills Receivable				
Sundry Debtors				
Temporary Investments				
Stock/Inventories				
Prepaid Expenses				
Accrued Incomes				
Total Current Assets				
<i>Current Liabilities :</i>				
Bills Payable				
Sundry Creditors				
Outstanding Expenses				
Bank Overdraft				
Short-term advances				
Dividends Payable				
Proposed dividends*				
Provision for taxation*				
Total Current Liabilities				
Working Capital (CA-CL)				
Net Increase or Decrease in Working Capital				

* May or may not be a current liability

Illustration 1. Prepare a Statement of changes in Working Capital from the following Balance Sheets of Manjit and Company Limited.

BALANCE SHEETS

as on 31st March

<i>Liabilities</i>	<i>2001</i> <i>Rs.</i>	<i>2002</i> <i>Rs.</i>	<i>Assets</i>	<i>2001</i> <i>Rs.</i>	<i>2002</i> <i>Rs.</i>
Equity Capital	5,00,000	5,00,000	Fixed Assets	6,00,000	7,00,000
Debentures	3,70,000	4,50,000	Long-term		
Tax Payable	77,000	43,000	Investments	2,00,000	1,00,000
Accounts Payable	96,000	1,92,000	Work-in-Progress	80,000	90,000
Interest Payable	37,000	45,000	Stock-in-trade	1,50,000	2,25,000
Dividend Payable	50,000	35,000	Accounts Receivable	70,000	1,40,000
			Cash	30,000	10,000
	11,30,000	12,65,000		11,30,000	12,65,000

Solution :

Statement of Changes in Working Capital

Particulars	2001 Rs.	2002 Rs.	Effect on Working Capital	
			Increase Rs.	Decrease Rs.
<i>Current Assets :</i>				
Cash	30,000	10,000		20,000
Accounts Receivable	70,000	1,40,000	70,000	
Stock-in-trade	1,50,000	2,25,000	75,000	
Work-in-progress	80,000	90,000	10,000	
	3,30,000	4,65,000		
<i>Current Liabilities :</i>				
Tax Payable	77,000	43,000	34,000	
Accounts Payable	96,000	1,92,000		96,000
Interest Payable	37,000	45,000		8,000
Dividend Payable	50,000	35,000	15,000	
	2,60,000	3,15,000		
Working Capital (CA-CL)	70,000	1,50,000		
Net Increase in Working Capital	80,000			80,000
	1,50,000	1,50,000	2,04,000	2,04,000

2. Statement of Sources and Application of Funds

Funds flow statement is statement which indicates various sources from which funds (working capital) have been obtained during certain period and the uses or applications to which these funds have been put during that period. Generally, this statement is prepared in two formats :

- (a) Report Form
- (b) T Form or An Account Form or Self Balancing Type.

Specimen of Report Form of Funds Flow Statement

	Rs.
<i>Sources of Funds :</i>	
Funds from Operations	
Issue of Share Capital	
Raising of long-term loans	
Receipts from partly paid shares, called up	
Sales of non current (fixed) assets	
Non-trading receipts, such as dividends received	
Sale of Investments (long-term)	
Decrease in working capital (as per Schedule of Changes in Working Capital)	
Total	
<i>Applications or Uses of Funds :</i>	
Funds Lost in Operations	
Redemption of Preference Share Capital	
Redemption of Debentures	
Repayment of long-term loans	
Purchase of non-current (fixed) assets	
Purchase of long-term Investments	
Non-trading payments	
Payments of dividends*	
Payment of tax*	
Increase in Working Capital (as per Schedule of Changes in Working Capital)	
Total	

**T Form or An Account Form or Self Balancing Type
Funds Flow Statement**

<i>Sources</i>	<i>Rs.</i>	<i>Applications</i>	<i>Rs.</i>
Funds from Operations		Funds lost in Operations	
Issue of Share Capital		Redemption of Preference Share Capital	
Issue of Debentures		Redemption of Debentures	
Raising of long-term loans		Repayment of long-term loans	
Receipts from partly paid shares, called up		Purchase of non-current Investments	
Sale of non-current (fixed) assets		Non-trading payments	
Sale of long-term Investments		Payment of Dividends	
Net Decrease in Working Capital		Net Increase in Working Capital	

* Note : Payment of dividend and tax will appear as an application of funds only when these items are appropriations of profits and not current liabilities.

Sources of Funds : The following are the sources from which funds generally flow (come), into the business :

1. Funds from operation or Trading Profits

Trading profits or the profits from operations of the business are the most important and major source of funds. Sales are the main source of inflow of funds into the business as they increase current assets (cash, debtors or bills receivable) but at the same time funds flow out of business for expenses and cost of goods sold. Thus, the net effect of operations will be a source of funds if inflow from sales exceeds the outflow for expenses and cost of goods sold and vice-versa. But it must be

remembered that funds from operations do not necessarily mean the profit as shown by the Profit and Loss Account of a firm, because there are many non-fund or non-operating items which may have been either debited or credited to Profit and Loss Account. The examples of such items on the debit side of a Profit and Loss Accounts are amortization of fictitious and intangible assets such as goodwill, preliminary expenses and discount on issue of shares and debentures written off, appropriation of retained earnings, such as transfers to reserves, etc., depreciation and depletion, loss on sale of fixed assets, payment of dividend, etc. The non-fund items are those which may be operational expenses but they do not affect funds of the business, e.g., in case of depreciation charged to Profit and Loss Account, funds really do not move out of business. Non-operating items are those which although may result in the outflow of funds but are not related to the trading operations of the business, such as loss on sale of machinery or payment of dividends. There are two methods of calculating funds from operations which are as follows :

(a) *The first method* is to prepaid the Profit and Loss Account afresh by taking into consideration only fund and operational items which involve funds and are related to the normal operations of the business. The balancing figure in this case will be either funds generated from operations or funds lost in operations depending upon whether the income or credit side or Profit and Loss Account exceeds the expense or debit side of Profit and Loss Account or vice-versa.

(b) *The second method* (which is generally used) is to proceed from the figure of net profit or net loss as arrived at from the Profit and Loss Account already prepared. Funds from operations by this method can be calculate as under :

(a) Calculation of Funds from Operation

	Rs.
Closing Balance of Profit and Loss Account (as given in the Balance Sheet)	
<i>Add</i> Non-fund and Non-operating items which have been already debited to Profit and Loss Account :	
(i) Depreciation and Depletion	
(ii) Amortization of fictitious and Intangible Assets such as : Goodwill/ Patents/Trade marks/Preliminary Expenses/ Discount on Issue of Shares, etc.	
(iii) Appropriation of Retained Earnings, such as : Transfer to General Reserve/ Dividend Equalisation Fund/ Transfer to Sinking Fund/ Contingency Reserve etc.	
(iv) Loss on the Sale of any non-current (fixed) assets such as : Loss on sale of land and building/Loss on sale of machinery/ Loss on sale of furniture/Loss on sale of long-term investments etc.	
(v) Dividends including : Interim Dividend/ Proposed Dividend (if it is an appropriation of profits and not taken as current liability)	
(vi) Provision for Taxation (if it is not taken as Current Liability)	
(vii) Any other non-fund/non-operating items which have been debited to Profit and Loss Account	
Total (A)	
<i>Less</i> Non-fund or Non-operating items which have already been credited to Profit and Loss Account	
(i) Profit or Gain from the sale of non-current (fixed) assets such as : Sale of land and building/Sale of plant & machinery/ Sale of long-term investments, etc.	
(ii) Appreciation in the value of fixed assets, such as increase in the value of land if it has been credited to Profit and Loss Account	
(iii) Dividends Received	
(iv) Excess Provision retransferred to Profit and Loss Account or written off	
(v) Any other non-operating item which has been credited to Profit and Loss Account	
(vi) Opening balance of Profit and Loss Account or Retained Earnings (as given in the Balance Sheet)	
Total (B)	
Total (A) – Total (B) = Funds generated by operations	

(b) Funds from operations can also be calculated by preparing Adjusted Profit and Loss Account as follows :

Adjusted Profit and Loss Account

	Rs.		Rs.
To Depreciation & Depletion or amortization of fictitious and intangible assets, such as : Goodwill, Patents, Trade Marks, Preliminary Expenses etc.		By Opening Balance (of P&L A/c)	
To Appropriation of Retained Earnings, such as : Transfers to General Reserve, Dividend Equalisation Fund, Sinking Fund, etc.		By Transfers from excess provisions By Appreciation in the value of fixed assets	
To Loss on Sales of any non-current or fixed assets		By Dividends received By Profit on sale of fixed or non-current assets	
To Dividends (including interim dividend)		By Funds from Operations (balancing figure in case debit side exceeds credit side)	
To Proposed Dividend (if not taken as a current liability)			
To Provision for taxation (if not taken as a current liability)			
To Closing balance (of P&L A/c)			
To <i>Funds lost in Operations</i> (balancing figure, in case credit side exceeds the debit side)			

Illustration 2 : Nikhil Company presents the following information and you are required to calculate funds from operations :

Profit and Loss Account

Particulars	Rs.	Particulars	Rs.
To Expenses :		By Gross Profit	2,00,000
Operation	1,00,000	By Gain on Sale of Plant	20,000
Depreciation	40,000		
To Loss on Sale of building	10,000		
To Advertisement written off	5,000		
To Discount allowed to customers	500		
To Discount on Issue of Shares written off	500		
To Goodwill	12,000		
To Net Profit	52,000		
	2,20,000		2,20,000

Solution :

Calculation of Funds From Operations

		Rs.
Net Profit (as given)		52,000
<i>Add :</i> Non-fund or non -operating items which have been debited to Profit and Loss Account		
Depreciation	40,000	
Loss on sale of Building	10,000	
Advertisement written off	5,000	
Discount on issue of shares written off	500	
Goodwill written off	12,000	67,500
		1,19,500
<i>Less :</i> Non-fund or non-operating items which have been credit to Profit and Loss Account :		
Gain on sale of Plant	20,000	20,000
Funds from Operations		99,500

Alternatively :

Adjusted Profit and Loss Account

	Rs.		Rs.
To Depreciation	40,000	By Opening balance	–
To Loss on sale of building	10,000	By Gain on sale of plant	20,000
To Advertisement written off	5,000	By Funds from Operations	
To Discount on Issue of Shares	500	(balancing figure)	99,500
To Goodwill	12,000		
To Closing balance	52,000		
	1,19,500		1,19,500

2. Issue of Share Capital and Debentures

If during the year there is any increase in the share capital, whether preference or equity, it means capital has been raised during the year. Issue of shares/ debentures is a source of funds as it constitutes inflow of funds. Even the calls received from partly paid shares/debentures constitutes an inflow of funds. It should also be remembered that it is the net proceeds from the issue of share capital which amounts to a source of funds and hence in case shares are issued at premium, even the amount of premium collected shall become a source of funds. The same is true when shares are issued at discount; it will not be the nominal value of shares but the actual realisation after deducting discount that shall amount to inflow of funds. But sometimes shares are issued otherwise than in cash, the following rules must be followed :

- (i) Issue of shares or making of partly paid shares as fully paid out of accumulated profits in the form of bonus shares is not a source of funds.
- (ii) Issues of shares for consideration other than current assets such as against purchase of land, machines, etc. does not amount to inflow of funds.

- (iii) Conversion of debentures or loans into shares also does not amount to inflow of funds.

In all the three cases mentioned above, both the accounts involved are non-current and do not involve any current assets or funds.

3. Sale of Fixed (non-current assets) and Long-term or Trade investments

When any fixed or non-current asset like land, building, plant and machinery, furniture, long-term investments, etc. are sold it generates funds and becomes a source of funds. However, it must be remembered that if one fixed asset is exchanged for another fixed asset, it does not constitute an inflow of funds because no current assets are involved.

4. Non-Trading Receipts

Any non-trading receipt like dividend received, refund of tax, rent received, etc. also increases funds and is treated as a sources of funds because such an income is not included in the funds from operations.

5. Decrease in Working Capital

If the working capital decreases during the current period as compared to the previous period, it means that there has been a release of funds from working capital and it constitutes a source of funds.

Application or Uses of Funds

1. Funds lost in operations

Sometimes the result of trading in a certain year is a loss and some funds are lost during that period in trading operations. Such loss of funds in trading amounts to an outflow of funds and is treated as an application of funds.

2. **Purchase of fixed assets**

Purchase of fixed assets such as land, building, plant, machinery, long-term investments, etc., results in decrease of current assets without any decrease in current liabilities. Hence, there will be a flow of fund. But in case shares or debentures are issued for acquisition of fixed assets, there will be no flow of funds.

3. **Payment of dividend**

Payment of dividend results in decrease of a fixed liability and, therefore, it affects funds. Generally, recommendation of directors regarding declaration of dividend (i.e., proposed dividends) is simply taken as an appropriation of profits and not as an item affecting the working capital.

4. **Payment of fixed liabilities**

Payment of a long-term liability, such as redemption of debentures or redemption of redeemable preference shares, results in reduction of working capital and hence it is taken as an application of funds.

5. **Payment of tax liability**

Provision for taxation is generally taken as an appropriation of profits and not as application of funds. But if the tax has been paid, it will be taken as an application of funds.

14.5 HIDDEN TRANSACTIONS

While preparing a Funds Flow Statement, one has to analyse the given balance sheets. Items relating to current accounts, i.e., current assets and current liabilities have to be shown in the Schedule of Changes in Working Capital. But the non-current assets and non-current liabilities have to be further analysed to find out the hidden information with regard to sale or purchase of non-current assets, issue or

redemption of share capital, raising or repayment of long-term loans, transfer to reserve and provisions, etc. The following items require special care while preparing a Funds Flow Statement :

1. Fixed Assets

Sometimes there are certain adjustments or transactions of sale and purchase of fixed assets which are given after two Balance Sheets. Under such circumstances, it is desirable to prepare accounts relating to such fixed assets and provisions or reserve for depreciation. The working of these accounts will be as follows:

Fixed Asset Account

Particulars	Rs.	Particulars	
Rs.			
To Opening Balance b/d		By Adjusted Profit & Loss	
To Bank (Purchase of an Asset : Bal. fig.)		(Dep.)	
To Adjusted Profit & Loss A/c (Profit on Sale)		By Bank (Sale of an Asset)	
		By Adjusted Profit & Loss A/c (Loss on Sale)	
		By Balance c/d	

Depreciation Account

Particulars	Rs.	Particulars	Rs.
To Fixed Asset A/c (Accumulated depreciation relating to asset transferred or sold)		By Opening Balance b/d	
To Closing Balance c/d		By Adjusted Profit & Loss A/c (New provision or reserve)	

Illustration 3 : The following figures are available from the records of a Company :

	2001	2002
	Rs.	Rs.
Plant and Machinery	80,000	1,20,000

Additional Information :

(i) Depreciation charged during the year 50,000

(ii) A part of the plant whose written down value is Rs. 12,000 has been sold for Rs. 7,000

Prepare Plant and Machinery A/c.

Solution :

Plant and Machinery Account

	Rs.		Rs.
To Balance b/d	80,000	By Adjusted Profit & Loss A/c (Dep.)	50,000
To Bank A/c		By Bank A/c (Sale)	7,000
(Purchase of Plant & Machinery)		By Adjusted P/L A/c (Loss on Sale	5,000
(Bal. Fig.)	1,02,000	of Machinery)	
		By Balance c/d	1,20,000
	1,82,000		1,82,000

Thus depreciation of Rs. 50,000 and loss on sale of machinery Rs. 5,000 will be shown on the debit side of Adjusted Profit and Loss Account. Rs. 7,000 realised from the sale of plant will be shown as source and Rs. 1,02,000 i.e. purchased of plant and machinery as application in the Funds Flow Statement.

2. *Proposed Dividend :* It can be treated as an item of current liability or non-current liability but preferably it should be treated as non-current liability. For knowing hidden transactions relating to dividend, it is desirable to prepare proposed dividend account as follows (in case treated as non-current liability) :

Proposed Dividend Account

	Rs.		Rs.
To Bank (Payment of dividend of last year)		By Opening Balance b/d	
To Closing Balance c/d		By Adjusted Profit & Loss A/c (Provision made for the current year)	
		(Bal. fig.)	

If dividend paid during the year is not given, then it is assumed that last year balance must have been paid during the year and provision made during the year must be equal to the closing balance. Interim dividend has nothing to do with proposed dividend account. If interim dividend is paid it will be shown on the debit side of Adjusted Profit and Loss Account and on the application side of Funds Flow Statement. If treated as current liability it will be shown in Schedule of Changes in Working Capital and dividend paid will be shown on the debit side of Profit and Loss Account and as an application in the Funds Flow Statement.

3. *Provision for Income tax.* Like proposed dividend it can be treated as current liabilities or non-current Liability. But preferably it should be treated as non-current liability. If income tax paid during the year is not given, then it is assumed that last year balance must have been paid during the year and will be shown as an application in the Funds Flow Statement. Provision made during the year must be the closing balance of such account and will be shown on the debit side of Adjusted Profit and Loss A/c. Income Tax payable is a current liability. The provision for income tax account is prepared as under (if treated as non-current liability) :

Provision for Taxation Account

	Rs.		Rs.
To Bank (Tax paid)		By Opening Balance c/d	
To Closing Balance c/d		By Profit & Loss A/c (Provision made) (Bal. fig.)	

If treated as a current liability, it will be shown in the Schedule of Changes in Working Capital and tax paid will be shown as an application in the Funds Flow Statement and on the debit side of Profit and Loss Account.

4. *Fictitious Assets* : If there are certain fictitious assets shown in the Balance Sheet such as discount on issue of shares or debentures, preliminary expenses, underwriting commission, etc., then the balance to be written off to the Adjusted Profit and Loss Account can be calculated by preparing the fictitious asset account. It will be prepared as follows :

Fictitious Asset Account

	Rs.		Rs.
To Opening Balance c/d		By Adjusted Profit & Loss A/c (Bal. fig.) (written off)	
		By Balance c/d	

5. *Undistributed Reserves and Funds* : If there are any undistributed profits in the form of reserves and funds the difference of these reserves and funds will be shown on the debit or credit side of Adjusted Profit and Loss Account. If it increases, it will be shown on the debit side, if it decreases, will be shown on the credit side. The account is shown as under :

Reserve Account

	Rs.		Rs.
To Adjusted Profit & Loss A/c (reserve utilised)		By Balance c/d	
To Balance c/d		By Adjusted Profit and Loss A/c (new reserve)	

Illustration 4 : From the following balances extracted from XYZ Company Ltd. as on 31st March, 2001 and 2002, you are required to prepare a schedule of changes in Working Capital and a Funds Flow Statement.

Liabilities	As on 31st March		Assets	As on 31st March	
	2001	2002		2001	2002
Share Capital	1,00,000	1,10,000	Building	40,000	38,000
General Reserve	14,000	18,000	Plant and Machinery	37,000	36,000
P & L A/c	16,000	13,000	Investment(L.T.)	10,000	21,000
Creditors	8,000	5,400	Stock	30,000	23,400
B/P	1,200	800	B/R	2,000	3,200
Provision for Tax	16,000	18,000	Debtors	18,000	19,000
Provision for Doubtful Debts	400	600	Cash at Bank	6,600	15,200
			Preliminary Expenses	12,000	10,000
	1,55,600	1,65,800		1,55,600	1,65,800

Additional Information :

- (i) Depreciation charged on Plant was Rs. 4,000.
- (ii) Provision for taxation Rs. 19,000 was made during the year 2001-02.
- (iii) Interim dividend of Rs. 8,000 was paid during the year.
- (iv) A piece of machinery was sold for Rs. 8,000 during the year 2001-02. It had costed Rs. 12,000, depreciation of Rs. 7,000 has been provided on it.

Solution :**Schedule of Changes in Working Capital**

	2001	2002	Increase	Decrease
	Rs.	Rs.	Rs.	Rs.
<i>Current Assets :</i>				
Stock	30,000	23,400		6,600
B/R	2,000	3,200	1,200	
Debtors	18,000	19,000	1,000	
Cash at Bank	6,600	15,200	8,600	
<i>Current Liabilities :</i>				
Creditors	8,000	5,400	2,600	
B/P	1,200	800	400	
Provision for Doubtful Debts	400	600		200
			13,800	6,800
				7,000
			13,800	13,800

Funds Flow Statement*for the year ended 31.03.2002*

Sources	Rs.	Uses	Rs.
Funds from Operation(a)	33,000	Purchase of Machinery (b)	8,000
Sale of Machinery	8,000	Payment of Interim Divided	8,000
Issue of Share Capital	10,000	Purchase of Investment	11,000
		Payment of Tax (c)	17,000
		Increase in Working Capital	7,000
	51,000		51,000

Working Notes :

(a) Adjusted Profit and Loss Account

	Rs.		Rs.
To Interim Divided	8,000	By Net Profit b/d	16,000
To Depreciation of Building	2,000	By Profit on Sale of Machinery	3,000
To Preliminary Expenses	2,000	By Fund from Operations	33,000
To General Reserves	4,000		
To Depreciation on Plant and Machinery	4,000		
To Provision for Tax A/c	19,000		
To Net Profit c/d	13,000		
	52,000		52,000

(b) Plant and Machinery Account

	Rs.		Rs.
To Balance b/d	37,000	By Adjusted P & L A/c(Dep.)	4,000
To Adjusted P&L A/c (Profit)	3,000	By Bank A/c	8,000
To Bank (Purchase of Machinery) (Bal. figure)	8,000	By Balance c/d	36,000
	48,000		48,000

(c) Provision for Tax Account

	Rs.		Rs.
To Bank A/c (Bal. Fig.)	17,000	By Balance b/d	16,000
To Balance c/d	18,000	By Adjusted P&L A/c	19,000
	35,000		35,000

6. *Net Profit or Drawings.* Sometimes in case of sole trader or partnership concerns, capital of the proprietor or partners is given but figures of drawings or net profit may be missing. In order to find out these figures, capital account may prepared as follows :

Capital Account

	Rs.		Rs.
To Bank (Drawings) (Bal. fig.)		By Balance b/d	
To Balance c/d		By Adjusted P & L A/c (Net Profit) (Bal. fig.)	

7. *Intangible Assets.* Intangible assets as goodwill, patents, copyrights, licences are also written off from the Adjusted Profit and Loss Account. Till these assets are completely written off their balances will be shown in the Balance Sheet. Sometimes additions are also made to these assets. Balance to be written off will be the balancing figure. Such assets accounts are prepared as follows :

Intangible Asset Account

	Rs.		Rs.
To Balance b/d		By Adjusted Profit & Loss A/c	
To Bank Share Capital A/c (purchase for cash or issue of share capital)		(written off)	
		By Balance c/d	

8. *Redemption of Debentures* : When debentures are to be redeemed during a specified period, it must be seen whether the total payment to be made is more or less than the face value of debentures. If it is more than the face value, the excess will be charged to Adjusted Profit and Loss Account as loss on redemption and if less than the face value, the difference will be profit on redemption and will be shown on the credit side of Adjusted Profit and Loss Account. Actual amount paid will be shown an application in the Funds Flow Statement. The account will be prepared as under :

Debentures Account

	Rs.		Rs.
To Bank (Actual amount paid)		By Opening Balance	
To Adjusted Profit and Loss A/c (Bal. Fig.)		By Adjusted Profit and Loss A/c (loss on redemption)	
(Profit on redemption)		(Bal. Fig.)	

9. *Redemption of preference Share* : Like redeemable debentures, the redeemable preference shares can be redeemed by the company either at premium or at discount. Excess amount of premium paid alongwith the face value of the shares will be a charge to Adjusted Profit and Loss Account while discount gained on redemption will be credited to Adjusted Profit and Loss Account. The account of redeemable shares will be prepared as under :

Redeemable Preference Share Capital Account

	Rs.		Rs.
To Bank		By Opening Balance b/d	
To Profit and Loss A/c (Gain on Redemption)		By Profit and Loss A/c (Premium on Redemption)	

10. *Bonus Shares* : Bonus shares are those shares which are issued to the existing shareholders in certain proportion without receiving anything in cash from them. Such shares are issued from existing balances of various accounts such as capital redemption reserve, shares premium, general reserve or Profit and Loss Account. If indication to this respect is given, then that account is prepared in order to see the net effect of the account to be taken to Adjusted Profit and Loss Account.

Is depreciation a source of funds?

Depreciation means decrease in the value of an asset due to wear and tear, lapse of time, obsolescence, exhaustion and accident. Depreciation is taken as an operating expense while calculating funds from operations. The accounting entries are :

- | | | |
|------|---------------------|-----|
| (i) | Depreciation A/c | Dr. |
| | To Fixed Asset A/c | |
| (ii) | Profit and Loss A/c | Dr. |
| | To Depreciation A/c | |

Thus, effectively the Profit and Loss Account is debited while the Fixed Asset Account is credited with the amount of depreciation. Since, both Profit and Loss Account and the Fixed Asset Account are non-current accounts, depreciation is a non-fund item. It is neither a source nor an application of funds. It is added back to Operating Profit to find out funds from operations since it has already been charged to profit but it does not decrease funds from operations. Depreciation should not, therefore, be

taken as a 'Source of Funds'. If depreciation were really a source of funds by itself, any enterprise could have improved its funds position at will by merely increasing the periodical depreciation charge.

However, depreciation can be taken as a source of funds in a limited sense because of three reasons :

- (i) In case of manufacturing concern, when current assets include closing inventory is and the value of closing inventories includes the depreciation on fixed assets as an element of cost, depreciation acts as a source of funds in such a case.
- (ii) Depreciation does not generate funds but it definitely save funds. For example, if the business had taken the fixed assets on hire, it would have been required to pay rent for them. Since it owns fixed assets, it saves outflow of funds which would have otherwise gone out in the form of rent.
- (iii) Depreciation reduces taxable income and therefore, income-tax liability for the period is reduced. This will be clear with the following example.

		Case I	Case II
Income before depreciation	Rs.	75,000	Rs. 75,000
Depreciation provided (A)		<u>Nil</u>	<u>15,000</u>
Taxable income		75,000	60,000
Income tax say at 50 per cent		<u>37,500</u>	<u>30,000</u>
Net Income after (B)		<u>37,500</u>	<u>30,000</u>
Net flow of funds after tax (A) + (B)		37,500	45,000

The above example shows that in case II, the net flow of funds is more by Rs. 7,500 as compared to case I. This is because on account of depreciation charge being claimed as an expense, tax liability has been reduced by Rs. 7,500 in case of case II. It may therefore be said that true funds flow from depreciation is the opportunity saving of cash outflow through taxation.

Illustration 5 : From the following details relating to the accounts of Kapil & Co. Ltd., prepare Statement of Sources and Applications of Funds :

<i>Liabilities</i>	31.03.2002	31.03.2001	<i>Assets</i>	31.03.2002	31.03.2001
Share Capital	4,00,000	3,00,000	Goodwill	90,000	1,00,000
Reserve	1,00,000	80,000	Plant & Machinery	4,29,250	2,98,000
Profit & Loss A/c	50,000	30,000	Debentures Discount	5,000	8,000
Debentures	1,00,000	1,50,000	Prepaid Expenses	5,750	4,000
Income Tax Provision	40,000	50,000	Investments	60,000	1,00,000
Trade Creditors	70,000	90,000	Sundry Debtors	1,10,000	1,60,000
Proposed Dividend	40,000	30,000	Stock	80,000	50,000
			Cash and Bank balances	20,000	10,000
	8,00,000	7,30,000		8,00,000	7,30,000

- (i) 15% depreciation has been charged in the accounts on Plant and Machinery
- (ii) Old machines costing Rs. 50,000 (W.D.V. Rs. 20,000) have been sold for Rs. 35,000.
- (iii) A machine costing Rs. 10,000 (W.D.V. Rs. 3,000) have been discarded.
- (iv) Rs. 10,000 profit has been earned by sale of investments.
- (v) Debentures have been redeemed at 5% premium.
- (vi) Rs. 45,000 income tax has been paid and adjusted against Income-tax Provision Account.

Solution :

Funds Flow Statement

	Rs.		Rs.
Sale of Machine	35,000	Purchase of Machine (3)	2,30,000
Sale of Investments(4)	50,000	Payment of Debentures	52,500
Issue of Shares	1,00,000	Payment of Income Tax	45,000
Funds from Operations (2)	1,84,250	Payment of Dividend	30,000
		Increase in working capital (1)	11,750
	3,69,250		3,69,250

Working Notes :**(1) Schedule of Changes in Working Capital**

	Rs.	Rs.	Increase Rs.	Decrease Rs.
<i>Current Assets :</i>				
Stock	50,000	80,000	30,000	
Sundry Debtors	1,60,000	1,10,000		50,000
Cash and Bank Balances	10,000	20,000	10,000	
Prepaid Expenses	4,000	5,750	1,750	
<i>Current Liabilities :</i>				
Trade Creditors	90,000	70,000	20,000	
			61,750	50,000
				11,750
Increase in Working Capital			61,750	61,750

(2) Adjusted Profit and Loss Account

	Rs.		Rs.
To Goodwill	10,000	By Balance b/d	30,000
To Loss on Machine Discarded	3,000	By Profit on Sale of Machine	15,000
To Debenture Discount	3,000	By Profit on Sale of Investment	10,000
To General Reserve	20,000	By Funds from Operations	1,84,250
To Debentures (Premium)	2,500		
To Income-tax Provision (5)	35,000		
To Proposed Dividend	40,000		
To Depreciation on Plant & Machinery (3)	75,750		
To Balance c/d	50,000		
	2,39,250		2,39,250

(3) Plant and Machinery Account

	Rs.	Rs.	
To Balance b/d	2,98,000	By Bank A/c	35,000
To Profit and Loss A/c	15,000	By Profit and Loss A/c	3,000
To Bank (Purchase of Machinery)		By Depreciation A/c	
(Bal. fig.)	2,30,000	15% on Rs. 2,75,000	41,250
		15% on Rs. 2,30,000	34,500
		By Balance c/d	4,29,250
	<u>5,43,000</u>		<u>5,43,000</u>

* Closing Balance		4,29,250
Less : W.D.V. of Old Machine (2,75,000-41,250)		2,33,750
W.D.V. of additions		<u>1,95,500</u>
So Depreciation charged on addition within the year	$= \frac{15}{85} \times 1,95,500$	
		= Rs. 34,500

(4) Investment Account

	Rs.		Rs.
To Balance b/d	1,00,000	By Bank	50,000
To Profit & Loss A/c	10,000	By Balance c/d	60,000
	1,10,000		1,10,000

(5) Income Tax Provision Account

	Rs.		Rs.
To Bank A/c	45,000	By Balance b/d	50,000
To Bank c/d	40,000	By Profit and Loss A/c	35,000
	<u>85,000</u>		<u>85,000</u>

14.6 DIFFERENCE BETWEEN FUNDS FLOW STATEMENT AND INCOME STATEMENT

A Funds Flow Statement differs from an Income Statement (i.e., Profit and Loss Account) in several respects :

- (i) A Funds Flow Statement deals with the financial resources required for running the business activities. It explains how were the funds obtained and how were they used. Whereas an Income Statement discloses the results of the business activities, i.e., how much has been earned and how it has been spent.
- (ii) A Funds Flow Statement matches the funds raised and funds applied during a particular period. The sources and applications of funds may be of capital as well as of revenue nature. An Income Statement matches the incomes of a period with the expenditure of that period which are both of a revenue nature. For example, when shares are issued for cash, it becomes a source of funds while preparing a Funds Flow Statement but it is not an item of income for an Income Statement.
- (iii) Sources of funds are many besides operations such as share capital, debentures, sale of fixed assets, etc. An Incomes Statement which discloses the results of operations cannot even accurately tell about the funds from operations alone because of non-fund items (such as depreciation, writing off of fictitious assets etc.) being included therein.

Thus, both Income Statement and Funds Flow Statement have different functions to perform. Modern management needs both. One cannot be a substitute for the other rather they are complementary to each other.

14.7 USES OF FUNDS FLOW STATEMENT

The various uses of Funds Flow Statement are summarised as under :

- (a) As a tool of historical analysis, it provides an answer to some of the important financial questions such as :

- (i) How was it possible to distribute dividend in excess of current earnings or in the presence of a net loss for the period? (i.e. the firm might have raised funds from other sources also in addition to funds from operations).
 - (ii) Why has the net working capital decreased although the net income for the period has gone up? (i.e. the firm might have applied the funds more than the sources of funds).
 - (iii) Why has the net working capital increased even though there has been a net loss for the period? (i.e., the firm might have raised the funds more than the application of funds).
 - (iv) What happened to the proceeds of the sale of plant and equipment? (e.g., the firm might have purchased some fixed assets or it might have redeemed the redeemable debentures or preference shares)
 - (v) Why did the firm resort to long-term borrowings inspite of large profits?
 - (vi) Why did the firm issue new equity or preference shares?
 - (vii) How was the retirement of long-term debts or redemption of redeemable preference shares accomplished? (e.g. the firm might have issued new shares).
- (b) As a tool of planning, the Projected Fund Flow Statement enables the management to plan its future investments, operating and financial activities such as the repayment of long-term loans and interest thereon, modernisation or expansion of plant, payment of cash dividend etc.
- (c) Alongwith a Schedule of Changes in Working Capital, the Funds Flow Statement helps in managing and utilizing the working capital. The management can know

the adequacy or otherwise of the working capital and can plan for the effective use of surplus working capital or can make arrangement in case of inadequacy of working capital. Besides this, the management can identify the magnitude and directions of changes in various components of working capital and if there is any undesired situation such as heavy inventory accumulations, heavy funds locked up in receivables than normally required, the necessary action may be taken so as to achieve the desired level thereof.

14.8 LIMITATIONS OF FUNDS FLOW STATEMENT

The major limitations of Funds Flow Statement are summarised below :

- (a) It ignores the non-fund transactions. In other words, it does not take into consideration those transactions which do not affect the working capital e.g., issue of shares against the purchase of fixed assets, conversion of debentures into equity shares.
- (b) It is a secondary data based statement. It merely rearranges the primary data already appearing in other statements viz. Income Statement and Balance Sheet.
- (c) It is basically historical in nature, unless Projected Funds Flow Statements are prepared to plan for the future.

14.9 SUMMARY

A funds flow statement is an essential tool for the financial analysis and is of primary importance to the financial management. Now-a-days, it is being widely used by the financial analysts, credit granting institutions and financial managers. The basic purpose of a funds flow statement is to reveal the changes in the working capital on the two balance sheet dates. It also describes the sources from which additional working capital has been financed and the uses to which working capital has been applied.

Such a statement is particularly useful in assessing the growth of the firm, its resulting financial needs and in determining the best way of financing these needs. By making use of projected funds flow statements, the management can come to know the adequacy or inadequacy of working capital even in advance. One can plan the intermediate and long-term financing of the firm, repayment of long-term debts, expansion of the business, allocation of resources, etc.

14.10 KEYWORDS

Fund: It refers to all financial resources or purchasing power or economic value possessed by a firm at a point of time.

Fund flow statement: It is a technical device designed to analyse the changes in the financial condition of a business enterprise between two dates.

Flow of funds: The flow of fund refers to the changes in the existing financial position of a business caused by inflow of resources owing to receipts and payments.

14.11 SELF ASSESSMENT QUESTIONS

1. Explain the terms 'Funds' and 'Flow in Funds' in respect of Funds Flow Statement.
2. What is a 'Funds Flow Statement'? How is it prepared? What are the various sources and uses of funds ?
3. What do you mean by 'funds from operation'? How will you determine it ?
4. Discuss the importance or significance of Funds Flow Statement. How do you determine whether a particular change is in the nature of a source or of an application of funds ?
5. Is depreciation a source of funds? Justify your answer.
6. Following are the summarised Balance Sheets of A Ltd. as on 31st March, 2001 and 2002 :

Assets	2001	2002	Liabilities	2001	2002
	Rs.	Rs.		Rs.	Rs.
Fixed Assets	4,00,000	3,20,000	Share Capital	4,50,000	4,50,000
Investments	50,000	60,000	General Reserve	3,00,000	3,10,000
Stock	2,40,000	2,10,000	Profit and Loss A/c	16,000	68,000
Debtors	2,10,000	4,55,000	Creditors	1,68,000	1,34,000
Bank	1,49,000	1,97,000	Provision for Taxation	75,000	10,000
			Loan (short-term)	–	2,70,000
	10,49,000	12,42,000		10,49,000	12,42,000

Additional Information :

- (i) Investment costing Rs. 8,000 were sold during the year 2001-02 for Rs. 8,500
- (ii) Provision for taxation made during the year 2001-02 was Rs. 9,000
- (iii) During the year 2001-02, part of fixed assets costing Rs. 10,0000 were sold for Rs. 12,000.
- (iv) Dividend paid during the year 2001-02 amounted to Rs. 40,000.

Prepare Funds Flow Statement for the year ended, 2001-02.

14.12 SUGGESTED READINGS

1. M.Y. Khan & P.K. Jain, Management and Cost Accounting.
2. Ravi M. Kishore, Financial Management.
3. R.P. Rustagi, Financial Management
4. S.N. Maheshwari, Management Accounting and Financial Control.

Subject : Accounting for Managers

Course Code : CP-104

Updated by: Dr. M.C. Garg

Lesson : 15

BUDGETING AND BUDGETARY CONTROL

STRUCTURE

- 15.0 Objective
- 15.1 Introduction
- 15.2 Meaning of Budgetary Control
- 15.3 Advantages of Budgetary Control
- 15.4 Limitations of Budgetary Control
- 15.5 Requirements of a Sound Budgetary System
- 15.6 Budgetary Control Organisation
- 15.7 Types of Budgets
- 15.8 Fixed Budgets
- 15.9 Flexible Budget
- 15.10 Performance Budgeting
- 15.11 Zero-base Budgeting
- 15.12 Summary
- 15.13 Keywords
- 15.14 Self Assessment Questions
- 15.15 Suggested Readings

15.0 OBJECTIVE

After reading this lesson, you must be able to :

- (a) define the terms 'budget' and 'budgetary control';
- (b) explain the objectives, advantages and limitations of budgeting and budgetary control;
- (c) understand the requirements of a sound budgetary system;
- (d) prepare various types of budgets;
- (e) discuss different developments in the area of budgeting;

15.1 INTRODUCTION

Present business world is full of competition, uncertainty and exposed to different types of risks. The complexity of managerial problems has led to the development of various management control techniques and procedures useful for the management in managing the business successfully. One of the essential features of modern business management is planning and control. There are a number of tools and devices which assist management in planning and controlling business operations. Budgetary control is the most common, useful and widely used standard device of planning and control. Before defining the budgetary control let us first understand the meaning of a 'budget' and 'control'.

Meaning of Budget

A budget is a detailed plan of operations for some specific future period. It is an estimate prepared in advance of the period to which it applies. It acts as a business barometer as it is complete programme of activities of the business for the period covered. According to Gordon and Shillinglaw budget may be defined as "a predetermined detailed plan of action developed and distributed as a guide to current operations and as a partial basis for the subsequent evaluation of performance". The Chartered Institute of Management Accountants, London defines a budget as "a financial and/or quantitative statement, prepared prior to a defined period of time, of the policy to be pursued during that period for the purpose of attaining a given objective. Thus, the following are the essentials of a budget :

- (a) It is prepared in advance and is based on a future plan of actions.
- (b) It relates to a future period and is based on objectives to be attained.
- (c) It is a statement expressed in monetary and/or physical units prepared for the implementation of policy formulated by the management.

Meaning of Control

Control means, "some sort of systematic effort to compare current performance to a predetermined plan or objective, presumably in order to take only remedial action required". This is a very general definition of the term. However, as a management function, it has been defined as "the process by which managers assure that resources are obtained and used effectively and efficiently in the accomplishment of the organisation's goals".

Management control process involves two separate but closely related activities : planning and control. Planning means deciding what is to be done and how it is to be done. Control is assuring that desired results are attained. Budget implies a plan of action hence the technique of Budgetary Control is an important tool of management control.

15.2 MEANING OF BUDGETARY CONTROL

According to W.W. Bigg, "The term 'budgetary control' applies to a system of management and accounting control by which all operations and output are forecast as far as ahead as possible and the actual results, when known, are compared with the budget estimates." Thus, the term 'budgetary control' is designed to evaluate the performance in terms of goals budgeted through budget reports.

According to J. Batty, "Budgetary control is a system which uses budgets as a means of planning and controlling all aspects of producing and/or selling commodities or services." Budgetary control consists of the following :

- (a) Determination of the objective to be achieved. The objective may be higher profits, better financial position, better position in the market etc.
- (b) Knowing the steps necessary to achieve the objective, that is to say laying down an exact and detailed course of action, month by month and over the whole period.
- (c) Translation of the course of action into quantitative and monetary terms. This means drawing up budgets.
- (d) Constant comparison of the actual with the budget (again both physical achievement and money values involved), noting discrepancies and their reasons and taking steps to remove causes of shortcoming, wastages, losses etc., and to consolidate reasons leading to good results.

15.3 ADVANTAGES OF BUDGETARY CONTROL

Budgetary control has become an essential tool of management for controlling costs and maximising profits. It acts as a friend, philosopher and guide to the management. Its advantages to management can be summarised as follows :

1. **Economy in working :** It brings efficiency and economy in the working of the business enterprise. Even though a monetary reward is not offered, the budget becomes a game – a goal to achieve or a target to shoot at – and hence it is more likely to be achieved or hit than if there was no predetermined goals or target. "The budget is an impersonal policeman that maintains ordered effort and brings about efficiency in results".
2. **Buck-passing avoided :** It establishes divisional and departmental responsibility. It thus prevents alibis and "buck-passing" when the budget figures are not met.
3. **Establishes coordination :** It coordinates the various divisions of a business, namely, the production, marketing, financial and administrative divisions.

It "forces executives to think, and think as a group". This results in smoother operation of the entire plant.

4. **Acts as a safety signal :** It acts as a safety signal for the management. It shows when to proceed cautiously and when manufacturing or merchandising expansion can be safely undertaken. It serves as an automatic check on the judgement of the executives as losses are revealed in time which is a caution to the management to stop wastage.
5. **Adoption of uniform policy :** Uniform policy without the disadvantage of military type of business organisation can be pursued by all divisions of the business by means of centralisation of budgetary control.
6. **Decrease in production costs :** Seasonal variations in production can be reduced by developing new "fill in" products. This results in decreasing the cost of production by increasing volume of output.
7. **Adoption of standard costing principles :** The use of budget figures as measures of operating performance and financial position makes possible the adoption of the standard costing principles in divisions other than the production division.
8. **Optimum mix :** It helps management in obtaining the most profitable combination of different factors of production. This results in a more economical use of capital.
9. **Favour with credit agencies :** Managements who have developed a well ordered budget plan and who operate accordingly, receive greater favour from credit agencies.

15.4 LIMITATIONS OF BUDGETARY CONTROL

1. **Based on estimates :** The strength or weakness of the budgetary programme depends to a large degree on the accuracy with which the basic estimates are made. The estimates must be based on all available facts and good judgement. The forecasting of sales and expenses cannot be an exact science. However, there are numerous statistical and other techniques that may be efficiently applied to the problem. These tempered with sound reasoning and judgement produce satisfactory results in most cases.
2. **Need for continuous adaptation :** A budgetary programme cannot be installed and perfected in a short time. Budget techniques must be continuously adapted not only for each particular concern but for changing conditions within the concern.

3. **No automatic execution of the budget :** Once the budget is complete, it will be effective only if all responsible executives get behind it and exert continuous and aggressive efforts towards its achievement. Departmental heads must feel the responsibility for achieving and bettering department goals laid down in the budget.
4. **Only a tool of the management :** The budget should be regarded not as a master but as a servant. It is one of the best tools yet devised for advancing the affairs of a company and the individuals in their various areas of managerial activity.

15.5 REQUIREMENTS OF A SOUND BUDGETARY SYSTEM

An evaluation of successful budgetary programmes indicates that there are some common practices to be observed. Failure to appreciate and observe these essentials will negate to a large extent the value of a budgetary program. These essentials or pre-requisites for successful budgeting are listed below :

1. **Support of top management :** The budget should be sponsored by management and it should have the active and whole-hearted support of top management.
2. **Built-up by responsibility centres :** For sound budgetary system, it is also necessary that it should be built-up by responsibility centres and should show the controllable costs in each responsibility centre.
3. **Participation by responsible supervisors :** The responsible supervisors should participate in the process of setting the budget figures and should agree that the budget goals are reasonable. If they are not consulted, their attitude towards the budget is likely to be one of indifference and resentment. In other words, budget targets should not be imposed by the management rather they should emanate from the organization itself.
4. **Clear-cut organizational structure :** A successful budgetary program presupposes a clear allocation of authority, duties and responsibilities in the organisation. Everybody in the organization should know who is responsible to whom.
5. **Continuous budget education :** If the budget is to be effective, all responsible supervisors must be actively interested in it. This requires that the responsible supervisors are aware of the entire budgeting process. The best way to assure this is a program of continuous budget education through manuals, meetings, etc. to discuss the preparation of budget and actual results achieved.
6. **Reasonably attainable targets :** The targets laid down in the budget should be reasonably attainable. Too high a target will be frustrating and too low a target will encourage complacency.

7. **Thorough review of budget estimates :** The review of budget estimates by higher levels of management should be thorough. Casual review is a signal that management is really not much interested in the budget process.
8. **Proper communication :** Final approval of the budget should be specific and this approval should be communicated to the organisation. An attempt to operate on the doctrine "silence gives consent" inevitably leads to misunderstanding.
9. **Flexible :** It is important that budgeting is flexible rather than static. Instead of basing budgets on a single fixed level of activity, they should be prepared for several levels of activity. Again, budget should be revised if market conditions change.

15.6 BUDGETARY CONTROL ORGANISATION

The shape and design of budgetary control system is largely determined by the size and nature of the business organisation. In a large sized organization, an effective budgetary control system can be organised on the following lines :

1. **Creation of Budget Centres :** The first step in the budget preparation is the creation of budget centres. A budget centre is a section of the organisation of an undertaking defined for the purposes of budgetary control. Generally different departments organised on the basis of functions form budget centres and department heads work as responsibility centre. For example, production manager has to be consulted for the preparation of production budget.
2. **Provision of Adequate Accounting Record :** An efficient budgetary system requires the provision of appropriate and adequate accounting records also. A chart of accounts corresponding with the budget centres should be maintained in order to help in preparation and analyzing information.
3. **Setting the Guidelines :** The next step in the preparation of budget is setting the guidelines. It is mainly concerned with determining management policy with regard to range of products, stock levels, channels of distribution, investment policies etc.
4. **Establishment of a Budget Committee :** In small organisations budget may be prepared by one executive and he is made incharge of all budgetary arrangements. But in large organisations, a budget committee may be created under the charge of a budget officer or the Director of Finance. Though individual circumstances affect the actual composition of the committee, it has often been found advisable to include various departmental heads as members of this committee. This budget committee will prepare, review, discuss and co-ordinate budget activities in the organization. The various departmental heads will be members of this committee and they will prepare initial estimates for the budgets

of their respective departments. Then these budgets will be reviewed and co-ordinated by the budget committee. A good budget is the result of the combined skill of the executives responsible for their own particular phase of the activities of the organisation.

5. Budget Officer : A major step in introducing the budgetary control programme is the appointment of an expert in budgeting, known as budget officer, budget accountant, budget controller, or budget director (in some organisations budgeting is taken care of by Finance Director also). He is responsible for designing the entire budgetary programme and furnishing the estimates of financial data to help in the compilation of budget. He provides necessary technical assistance and advice to the executives in utilizing the budget. The supervisory responsibility concerning budget operations is delegated to him and through variance analysis he prepares budget report. These reports are submitted to the line executives. He is also responsible for bringing the technical analysis of the data when called for by the various departments.

6. Preparation of a Budget Manual : To systematize the budget procedure and provide the necessary guidelines for the preparation of various budgets a Budget Manual can be prepared. This manual would include such matters as the following – the functions and responsibilities of various members of the budget committee, the objects and description of the budgetary control system, statement of the steps in the preparation of a budget, the procedure of preparation and modification of various accounting records for the budget period etc.

7. Determination of the 'Key Factor' : Key-factor is also known as a 'Limiting Factor', 'Governing Factor' or 'Principal Budget Factor'. For the successful implementation of a budgetary system, the individual budgets for each item should be co-ordinated and inter-related. Because of this interlink, the limitation or constraint affecting a particular budget has its influence on the rest of the budgets. A factor which is of such importance that it affects almost all the other functional budgets to a large extent is known as the Principal Budget Factor.

8. Laying Down the Levels of Activity : It is also essential to establish the normal level of activity; i.e., the level of output/sales company can reasonably expect to achieve during the year.

9. Budget Reports : Installation of budgets is in itself of no use unless a comparison is made regularly between the actual expenditure and the budgeted allowances. The results of this comparison should be reported to the management promptly. For this purpose, budget reports showing the comparison between the actual and budgeted expenditure should be presented periodically.

10. Revision of Budgets : To be of maximum use to the management for planning and operation, it is essential to revise budgets, as and when necessary, in order to fit them with the changing business conditions.

15.7 TYPES OF FUNCTIONAL BUDGETS

In the case of a manufacturing business accounting information should be supplied to management in the form of a series of budgets. The main functional budgets and the methods of arranging for the compilation of these budgets are as set out hereunder :

15.7.1 Sales Budget : These should be analysed as between products, periods and areas. By reference to the trends disclosed by the past figures and with the aid of information supplied by the sales department, a forecast of anticipated sales for the forthcoming period can be made. In making such forecast regard must be had to general trading conditions, any special conditions affecting the particular business, elasticity of demand, pricing policy, future advertising policy and the relevant factors. The sales forecast or sales budget is the basic core budget on which other budgets depend. As such rational efforts should be made to develop a proper sales budget which can be reasonably accomplished.

Preparation of Sales Budget :

It has already been stated that the Sales Budget is prepared by the sales manager. He is, therefore, to consider the following matters at the time of its preparation :

- (i) Analysis of Historical Sales :** Analysis of past sales, with the help of statistical measurements, cyclical trends, seasonal fluctuations etc., provides valuable information which ultimately helps to predict future sales.
- (ii) Reports by Salesmen :** Salesmen also can submit a report to the sales manager which is highly significant since they are in frequent contact with customers having an internal knowledge about the habits, tastes, and demand of the customers.
- (iii) Business Conditions :** The general business conditions can also be studied from the national as well as international economic statistics, political influences etc.
- (iv) Market Analysis :** Market analysis may be employed by the large firms whereas specialists are employed by the small firms for collecting necessary information about the market demands, product-designs, fashion trends, degrees of competition etc.
- (v) Special condition :** There are certain events which may influence sales outside the firm e.g., introduction of electricity to a village will increase the demand for electrical appliances.

Illustration : 1

From the following information you are asked to prepare a Sales Budget for the next year :

(a) Budgeted Sales for the current year :

Product	Colcatta	Delhi	Chandigarh
A	6,000 @ Rs. 10	8,000 @ Rs. 10	5,000 @ Rs.10
B	3,000 @ Rs. 15	10,000 @ Rs. 15	3,000 @ Rs.15
C	2,000 @ Rs. 20	12,000 @ Rs. 20	4,000 @ Rs.20

(b) Actual Sales for the current year :**Product :**

A	7,000 @ Rs. 10	10,000 @ Rs. 20	6,000 @ Rs. 10
B	2,000 @ Rs. 15	10,000 @ Rs. 15	5,000 @ Rs. 15
C	1,000 @ Rs. 20	10,000 @ Rs. 20	3,000 @ Rs. 20

After a careful market analysis and study, the following suggestions are presented :

- (i) Sales of product A can be increased by 30%, 40% and 80% in Colatta, Delhi and Chandigarh, respectively.
- (ii) Sales of product B can be increased by 20% in Delhi and 40% in Chandigarh but will be reduced by 20% in Colcutta.
- (iii) Sales of product C can be increased by 20% in Colcatta, 40% in Delhi and 50% in Chandigarh, provided that the budget committee approves a price reduction.
- (iv) The following prices are changed by the budget committee.

Product

A	will be increased by 20%
B	will be increased by 10%
C	will be reduced by 10%

Solution :**Sales Budget**

Period : For the next year

Cites	Products	Budgeted Sales for the current year			Actual Sales for the current year			Budgeted Sales for next year		
		Units	Rate	Value	Units	Rate	Value	Units	Rates	Value
Colcatta										
	A	6,000	10	60,000	7,000	10	70,000	7,800	12	93,600
	B	3,000	15	45,000	2,000	15	30,000	2,400	16.5	39,600
	C	2,000	20	40,000	1,000	20	20,000	2,400	18	43,200
	Total	11,000		1,45,000	10,000		1,20,000	12,600		1,76,400

Delhi										
A	8,000	10	80,000	10,000	20	2,00,000	11,200	12	1,34,400	
B	10,00	15	1,50,00	10,000	15	1,50,000	12,000	16.5	1,98,000	
C	12,000	20	2,40,000	10,000	20	2,00,000	16,800	18	3,02,400	
Total	30,000		4,70,00	30,000		5,50,000	40,000		6,34,800	
Chandigarh										
A	5,000	10	50,000	6,000		60,000	9,000	12	1,08,000	
B	3,00	15	45,00	5,000		75,000	4,200	16.5	69,300	
C	4,000	20	80,000	3,000		60,000	6,000	18	1,08,000	
Total	12,000		1,75,00	14,000		1,95,000	19,200		2,85,300	
Total										
A	19,000		1,90,000	23,000		3,30,000	28,000		3,36,000	
B	16,000		2,40,000	17,000		2,55,000	18,600		3,06,900	
C	18,000		3,60,000	14,000		2,80,000	25,200		4,53,600	
Total	53,000		7,90,000	54,000		8,65,000	71,800		10,96,500	

15.7.2 Purchase Budget : The purchase budget indicates, either in terms of money or of quantity, the expected purchases of raw materials to be made during the budget period. After ascertaining the proper requirement of different types of raw materials, it needs adjustment between the contract already made for the purchase of raw materials and the existing level of stock (in order to maintain a balanced level of stock of raw materials). In this respect, it may also be mentioned that internal sources of raw materials, if any, are also to be considered. However, this budget is based on Sales Budget, Production Cost Budget, Maximum and Minimum Stock, Stock Level, Economic Order Quantity (EOQ) etc.

Illustration :2

Prepare a Purchase Budget from the following particulars, when the estimated price per kg of material is : X Rs. 5, Y Rs.3 and 2 Rs. 4, respectively.

Materials	Estimated consumption of materials (in kg.)	
	on 1.1.2000	on 31.12. 2000
X	20,000	15,000
Y	40,000	20,000
Z	45,000	50,000
	Estimated Stock (in kg)	
	on 1.1.2000	on 31.12. 2000
X	20,000	15,000
Y	40,000	20,000
Z	45,000	50,000

Solution :**Purchase Budget**

Period : For the year ended
31st. Dec. 2000

Particulars	Materials	Materials	Materials
	X	Y	Z
	(in kg)	(in kg)	(in kg)
Estimated consumption of materials	80,000	2,00,000	2,50,000
<i>Add</i> : Stock to be required on 31.12.2000	15,000	20,000	50,000
Total requirement	95,000	2,20,000	3,00,000
<i>Less</i> : Estimated stock on 1.1.2000	20,000	40,000	45,000
Quantity to be purchased	75,000	1,80,00	2,5,000
Price per kg of material	Rs. 5	Rs. 3	Rs. 4
Estimated cost of purchase of materials	1,75,000	5,40,000	1,20,000

15.7.3 Production Budget : Production budget is prepared after the preparation of Sales Budget, to determine the quantity of goods which should be produced to meet the budgeted sales. It is expressed in physical terms, such as : (a) Units of output; (b) Labour hours and (c) Material requirement.

The Production Budget is prepared by the production management and is submitted to the budget committee for its approval. The following points are to be carefully noted at the time of its preparation.

- (i) To determine the quantity of each product which will be produced during the budget period.
- (ii) To prepare the production plan on the basis of the Sales Budget.
- (iii) To consider the key factor or limiting factor, if any.
- (iv) To consider the production plant capacity and production planning.
- (v) To consider the volume of production.

Illustration 3 : From the following particulars of OM Ltd., prepare a Production Budget for the year 2001

Product	Sales as per budgeted Sales (in units)	Estimated Stocks	
		(in units) (2000)	(2001)
A	5,00,000	20,000	30,000
B	3,00,000	40,000	40,000
C	8,00,000	60,000	45,000

Solution :

Production Budget

For the year 2001

	A (in units)	B (in units)	C (in units)
Budgeted	5,00,000	3,00,000	8,00,000
<i>Add :</i> Stock (1995)	30,000	40,000	45,000
	<u>5,30,000</u>	<u>3,40,000</u>	<u>8,45,000</u>
<i>Less :</i> Stock (1994)	20,000	40,000	60,000
Estimated production	<u>5,10,000</u>	<u>3,00,000</u>	<u>7,85,000</u>

15.7.4 Raw Material Budget : This budget reveals the quantities of materials which are needed to make the budgeted production. It also shows the anticipated cost of materials to be purchased, terms of credit from suppliers, the time taken to procure raw materials etc.

This budget serves :

- (i) to provide information about the position of stock ;
- (ii) to give an idea about the total requirement of raw materials;
- (iii) to supply necessary data to the purchase department for their purchase programme; and
- (iv) to determine the cost of different types of raw materials.

Illustration : 4

From the given particulars presented by P. Ltd., you are asked to prepare a Material Budget. Estimated Sales 52,000 units.

(Each unit of the product requires 2 units of material X and 4 units of material Y.)

Estimated Opening Balance :

Finished goods	10,000 units
Material-X	15,000 units
Material-Y	25,000 units

Materials on order (Opening) :

Material-X	8,000 units
Material-Y	12,000 units

Estimated Closing balances :

Finished goods	6,000 units
Material-X	16,000 units
Material-Y	30,000 units

Materials on order (Closing) :

Material-X	6,000 units
Material-Y	8,000 units

Solution :

Estimated Production : Expected Sales + Estimated Closing Stock– Estimated Opening Stock
 = 52,000 units + 6,000 units – 10,000 units
 = 48,000 units

Raw Material Budget
(in quantity)

Detail	Period	
	Material X units	Material Y units
Requirement of materials :		
Material X @ 2 units for 48,000 finished goods	96,000	
Material Y @ 4 units for 48,000 finished goods		1,92,000
Estimated closing balance of materials	16,000	30,000
Materials on order (closing)	6,000	8,000
	1,18,000	2,30,000
<i>Less</i> : Estimated opening balance of materials	15,000	25,000
	1,03,000	2,05,000
<i>Less</i> : Materials on order (opening)	8,000	12,000
	95,000	1,93,000

15.7.5 Direct Labour Budget

The direct labour budget tells about the estimates of direct labour requirements essential for carrying out the budgeted output. The direct labour cost is estimated as a result of the evaluation of standard hours worked or the quantity of work done by the individual worker in terms of certain average wage rate. This average wage rate may be different for each department. For estimating the average wage rates the following different approaches can be used :

- (i) The rates for the last budget period may be taken. Historical ratio may be calculated. This is arrived at by taking the ratio of wages paid to the direct labour hours worked. This ratio can be adjusted in the light of fresh changes, if any.
- (ii) Wage rates may be fixed by the agreement with the trade union.
- (iii) The current wage rate of the industry, trade or the national wage rate may be taken as average wage rate.

The Direct Labour Budget serves many purposes. The personnel manager can plan its requirements as per the budget requirements. The management can also control the direct labour cost by viewing per unit cost of production. It helps in estimating cash requirements for direct labour in preparing cash budget.

Following is the example of a Direct Labour budget.

Direct Labour Budget

For the year ending as on

Type of Product	Units to be Produced	Standard Labour hours (given)	Total Standard Labour hours required	Average wage rate per hour (given) Rs.	Total Labour Cost Rs.
A	2,50,000	1	2,50,000	1.00	2,50,000
B	1,50,000	2	3,00,000	1.50	4,50,000
	4,00,000		5,50,000		7,00,000

15.7.6 Manufacturing Overhead Budget : Manufacturing or Factory overhead include the cost of indirect labour, indirect materials and indirect expenses. The manufacturing overhead can be classified into three categories, (i) Fixed, i.e. which tend to remain constant irrespective of any change in the volume of output, (ii) Variable, i.e. which tend to vary with the output and (iii) Semi-variable, i.e., which are partly variable and partly fixed. The Manufacturing Overhead Budget will provide an estimate of all these overheads to be incurred in the budget period.

Illustration : 5

From the following average figures of previous quarters, prepare a manufacturing overhead budget for the quarter ending on December 31, 2001. The budgeted output during the quarter is estimated at 4,000 units.

	Rs.
Fixed overheads	25,000
Variable overheads	10,000 (varying @ Rs. 5 p.u.)
Semi-variable overheads	10,000 (40% fixed and 60% varying @ Rs. 3 p.u.)

Solution :

Manufacturing Overheads Budget
(For the quarter ending on December 31, 2001)

	Rs.
Fixed Overheads	25,000
Variable Overheads @ Rs. 5 p.u.	20,000
Semi-variable Overheads	
Fixed	4,000
Variable @ 3 Rs. 3 p.u.	12,000
Total Overheads Costs	61,000

15.7.7 Selling and distribution overheads budget : The selling expenses include all items of expenditure on the promotion, maintenance and distribution of finished products. Sales office rent, salaries, depreciation and other miscellaneous expenses are provided for as a fixed amount per month. Advertising, selling commission, bad debts, travelling and delivery expenses are provided for as a percentage of budgeted sales. Although selling expenses are not included as a part of product cost, these are frequently analysed by lines of product, sales territories, customers, salesmen or some such unit basis. Such an analysis of selling expenses can be applied in planning sales activity. Besides, if selling costs are budgeted and computed on a unit responsibility basis (products, territories, type of salesmen, customers etc.), it may be possible to identify differences by sales territories, salesmen, customer group etc. Thus, selling costs, like manufacturing costs, can be identified by area of responsibility and can be used as a means for control. The selling and distribution overheads budget is closely linked with the sales budget and should be prepared simultaneously with the sales budget. The sales manager, advertising manager and sales office manager will cooperate with the budget officer in the preparation of this budget.

15.7.8 Cash Budget : The cash budget is a summary of the firm's expected cash inflows and outflows over a particular period of time. In other words, cash budget involves a projection of future cash receipts and cash disbursements over various time intervals. There must be a balance between cash and the cash demanding activities/operations, capital expenditure and so on. Very often, the need for additional cash is not realised until the situation becomes critical. The cash budget consists of two parts :

1. The projected cash receipts (inflows) and;
2. The planned cash disbursements (outflows).

Cash receipts include collection from debtors, cash sales, dividends received, sale of assets, loans received and issues of shares and debentures. Payments include

wages and salaries, payment to creditors and suppliers, rent and rates, taxes, capital expenditure, dividend payable, commission payable and repayment of loans and debentures. The main purposes of the cash budget may be outlined as follows :

1. To indicate the probable cash position as a result of planned operations.
2. To indicate cash excess or shortages.
3. To indicate the need for borrowing or the availability of idle cash for investment.
4. To make provision for the coordination of cash in relation to (a) total working capital; (b) sales; (c) investment; and (d) debt.
5. To establish a sound basis for credit.
6. To establish a sound basis for exercising control over cash and liquidity of the firm.

The format of cash budget is given below :

ABC Company Ltd.
Cash Budget
(for the period ending 31st December, 2001)

Details	Month					
	July	Aug.	Sept.	Oct.	Nov.	Dec.
Opening balance						
Receipts						
Cash sales						
Collection from debtors						
Capital (issue of shares and debentures)						
Dividend						
Opening balance						
Receipts - cash sales						
collection from debtors						
capital (issue of shares and debentures)						
Dividend						
Total (A)						

Payments

Materials (Cash purchase)

Creditors/Suppliers

Wages

Factory overheads

Administration overheads

Selling and Distribution
overheads

Commission

Capital (repayment of
shares, debentures etc.)

Taxation

Dividend

Capital expenditure

Total (B)

Surplus/(Deficit) (A–B)

Illustration : 6

A company expects to have Rs. 37,500 cash in hand on 1st April, 1999 and requires you to prepare an estimate of cash position during the three months, April to June, 1999. The following information is supplied to you.

	Sales	Purchases	Wages	Factory Expenses	Office Expenses	Selling Expenses
February	75,000	45,000	9,000	7,500	6,000	4,500
March	84,000	48,000	9,750	8,250	6,000	4,500
April	90,000	52,500	10,500	9,000	6,000	5,250
May	1,20,000	60,000	13,500	11,250	6,000	6,570
June	1,35,000	60,000	14,250	14,000	7,000	7,000

Other Informations :

1. Period of credit allowed by suppliers—2 months.
2. 20% of sales is for cash and period of credit allowed to customers for credit sales is one month.

3. Delay in payment of all expenses – 1 month.
4. Income tax of Rs. 57,500 is due to be paid on June 15,1999.
5. The company is to pay dividends to shareholders and bonus to workers of Rs. 15,000 and Rs. 22,500 respectively in the month of April.
6. Plant has been ordered to be received and paid in May. It will cost Rs. 1,20,000.

Solutions :

Cash Budget

	April 1999 Rs.	May 1999 Rs.	June 1999 Rs.
Opening balance (Cash in hand)	37,500	11,700	-91,050
<i>Receipts from :</i>			
Cash Sale (20% of current month's sales)	18,000	24,000	27,000
Debtors (80% of previous month's sales)	67,200	72,000	96,000
Total	1,22,700	1,07,700	31,950
<i>Payments :</i>			
Creditors (2months'/previous purchases)	45,000	48,000	52,500
Wages (Previous month's wages)	9,750	10,500	13,500
Factory expenses (Previous months expenses)	8,250	9,000	11,250
Office expenses (Previous month's expenses)	6,000	6,000	6,000
Selling expenses (Previous month's expenses)	4,500	5,250	6,570
Dividend to shareholders	15,000		
Bonus to workers	22,500		
Purchase of plant		1,20,000	
Income tax			57,500
Total of payments	1,11,000	1,98,750	1,47,320
Closing balance (Receipts-Payments)	11,700	(-) 91,050	(-) 1,15,370
	(1,22,700- 1,11,000)	(1,07,700- 1,98,750)	(31,950 -1,47,320)

15.7.9 The Master Budget : The Institute of Cost and Management Accountings, England, defines it as 'the Summary Budget; incorporating its component functional budgets, which is finally approved, adopted and employed'. In other words, it is a summary budget which is prepared from and summarises all the functional budgets. This summarising is done in the form of :

- (a) Budgeted Profit and Loss Account/Budgeted Profit and Loss Appropriation Account,
- (b) Budgeted Balance Sheet.

Budgeted Profit and Loss/Profit and Loss appropriation Account shows the principal items of revenue, expenses, loss as well as profit whereas the Budgeted Balance Sheet reveals the principal items of Balance Sheet.

This budget is prepared by the budget officer. After its preparation, it is submitted to the budget committee for its approval. If the budget committee does not find it satisfactory, it makes suitable changes in this budget and puts it into action when the final approval is given. However, once it is approved, the company seeks to achieve the targets during the budget period.

15.8 FIXED BUDGETS

It is a budget in which targets are rigidly fixed. According to I.C.M.A. London, "Fixed budget is a budget which is designed to remain unchanged irrespective of the level of activity actually attained". Such budgets are usually prepared from one to three months in advance of the fiscal year to which they are applicable. Thus, twelve months or more may elapse before figures forecast for the December budget are used to measure actual performance. Many things may happen during the period of twelve months and they may make the figures go widely out of line with the actual figures. This defect may be removed by the revision of budgeted targets, even then, the basic nature of such budget is of rigidly and it brings artificiality in the control over costs and expenses. Such budgets are preferred only where sales can be forecast with the greatest of accuracy, otherwise, it becomes an unrealistic measuring yard in case the level of activity (volume of production or sales) actually attained does not conform to the one assumed for budgeting purpose. The management will not be in a position to assess the performance of different departments on its basis. On account of these defects of fixed budgeting, it has become a common practice in case of concerns where sales and production can not be estimated accurately to give up the concept of fixed budgeting as it does not provide for automatic adjustments with volume changes.

15.9 FLEXIBLE BUDGET

Fixed or static Budget is generally rigid as it is based on one level of activity and one set of conditions and hence not quite helpful for control purpose. A flexible budget is therefore, designed to provide information as to sales, expenses and profits for different levels of activity which may be obtained. Such budgets are prepared in businesses where it is impossible to make a firm forecast of the future, not because of the absence of a clear management policy but because circumstances being entirely beyond the control of management, cannot be predicted.

It would be desirable to have a flexible budget for the following circumstances :

1. where sales cannot be predicted because of the nature of the business;
2. where the business is subject to variance of weather;
3. where progress depends upon an adequate supply of labour; and
4. in the case of a new business, where it is difficult to forecast the demand accurately.

In these similar circumstances, a budget should be prepared for a series of possible levels of activity.

In a flexible budgeting system, it is necessary to have the budgets quickly recast and changed to suit the actual conditions. Analysis of the behaviour of costs and expenses forms the bed rock of flexible budgeting system. With moderate changes in output or sales, fixed expenses do not change. Variable expenses per unit also remain the same. But there are a number of expenses, which are semi variable. Such expenses will vary when output and sales change but their change will not be in the same proportion as the change in output or sales nor will the proportion of change be uniform for variable expenses. Every item of expense should be studied to find out how it will behave if output or sales will change by say steps of 5%. Only when all expenses have been studied in this manner, can a system of flexible budgets be used. In short, flexible budgets mean new budgets to suit actual conditions.

Illustration 6 : The expenses budgeted for production of 10,000 units in a factory are furnished below :

Items	Per unit (Rs.)
Materials	70
Labour	25
Variable Overheads	20
Fixed Overheads (direct)	10
Variable Expenses (direct)	5
Selling Expenses (10% fixed)	13

Distribution Expenses (20% fixed)	7
Administration Expenses (Rs. 50,000)	5
Total Cost per unit	155

Prepare a budget for prediction of :

- 8,000 units; and
- 6,000 units.

Assume that administration expenses are rigid for all levels of production.

Solution :

Flexible Budget

Costs	10,000 Units		8,000 Units		6,000 Units	
	Per Unit	Amount	Per Unit	Amount	Per Unit	Amount
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Production Costs :						
Materials	70	7,00,000	70	5,60,000	70	4,20,000
Labour	25	2,50,000	25	2,00,000	25	1,50,000
Overheads	20	2,00,000	20	1,60,000	20	1,20,000
Direct Variable Exp.	5	50,000	5	40,000	5	30,000
Fixed overheads	10	1,00,000	12.5	1,00,000	16.67	1,00,000
Selling Expenses :						
Fixed	1.3	13,000	1.63	13,000	2.17	13,000
Variable	11.7	1,17,000	11.70	93,600	11.70	70,200
Distribution Expenses						
Fixed	1.4	14,000	1.75	14,000	2.33	14,000
Variable	5.6	56,000	5.60	44,800	5.60	33,600
Administrative Expenses						
Total Costs	155.0	15,50,000	159.425	12,75,400	166.80	10,00,800

15.10 PERFORMANCE BUDGETING

Among the methods which relate costs to outputs or results, performance budgeting stands out the most prominent. It has emerged as a whole new way of considering fiscal responsibility. Also sometimes called as performance, or programme budgeting and planning, programming and budgeting system (PPBS), it focuses attention on the physical aspects of achievement. It is a refined approach to budgeting with an emphasis on work done or services rendered rather than being based simply on spending limits. It establishes cost/output relationship. It is a process of integrating inputs with outputs of a development programme. Performance budgeting involves three levels of management.

1. Policy management – identification of needs, analysis of options, selection of programmes and allocation of resources.
2. Resource management – establishment of basic support systems consisting of budgeting structures and financial management practices.

3. Programme budgeting – implementation of policies and related operations, accounting, reporting and evaluation.

Thus, a performance budget is one that presents the purposes and objectives of which funds are required, the cost of achieving them, and the quantitative data measuring the accomplishment and work performed under each programme. Performance budgeting involves the following steps :

1. Activity classification in terms of functions, programmes and activities.
2. Financial and physical measurement of the activities.
3. Progress reporting of performance at periodic intervals.
4. Needed restructuring of the accounting system.

The main objectives of performance budgeting are : (a) to coordinate the physical and financial aspects; (b) to improve the budget formulation, review and decision-making at all levels of management; (c) to facilitate better appreciation and review by controlling authorities (legislatures, Board of Trustees or Governors, etc.); (d) to make more effective performance audit possible; and (e) to measure progress towards long-term objectives which are envisaged in a development plan.

Since the financial and physical results are interwoven, it facilitates management control. It is of particular importance to government and non-profit organisations. With them, budgets have been essentially appropriation budgets with the focus largely on spending resources rather than on obtaining results. At the year-end, managers in these establishments are tempted to spend the appropriated amounts even if they are not needed. Performance budgeting changes the emphasis as budgets get related to outputs since it integrates financial outlays with physical content of programmes.

15.11 ZERO-BASE BUDGETING (ZBB)

The ZBB takes into account consequences that may flow if the project or responsibility centre is scratched. In other words, the objects of the ZBB is to formulate the budget so as to estimate the amount of expenditure likely to be incurred if the existing project resumes operation after being scratched. This method is called Zero-Base Budgeting since the existing system is discontinued and a fresh is made or the existing system is reviewed on the assumption of 'Zero-Base'.

Generally, the following points are to be considered before introducing ZBB :

- (i) Is it absolutely necessary ?
- (ii) What should be the qualitative features of current activities?

- (iii) Will production be continued according to the existing system ?
- (iv) What is the cost of production under current conditions ?

In this way, cost reduction is possible in the enterprises after careful analysis. However it takes a long time to implement this method although, through a minute review of the present system, overheads can be controlled.

15.11.1 Application of ZBB : It is very useful where 'cost analysis' is taken into consideration. Normally, the ZBB is applicable to those budgets which are not involved with direct costs only, because, direct costs (e.g. Direct Material and Direct Labour) may be controlled by the normal prediction operation since it assumes that each component of direct cost has been monitored and adjusted with production. That is why, ZBB is applicable to those budgets which involve overheads (e.g. Administration, Selling and Distribution Overhead) i.e., it is more applicable to discretionary cost areas. It is implied that ZBB is relevant where a budgeting system which has already been introduced, requires managers at the same time to develop qualitative measures.

The significant advantages of ZBB are :

- (i) It supplies the firm a systematic way in order to evaluate different programmes which are undertaken by the management allocating resources according to priority of the programmes and operations of the undertaking.
- (ii) It helps the management to know different departmental budgets on the basis of cost-benefit analysis, as such, no arbitrary increase or cuts in budget estimates are done.
- (iii) It is most appropriate both for the staff and supported areas of an organisation since the output are not related directly to the finished products of the unit.
- (iv) It also helps to locate the areas of wasteful expenditure, if any, and as such, it can also suggest alternative courses of action, if so desired by the management.

15.11.2 Limitations of ZBB : ZBB suffers from the following :

- (i) Introduction of ZBB system is no doubt expensive and time consuming process.
- (ii) ZBB also invites ranking process problems. It includes (a) Who will do the ranking? (b) What method should be adopted for this purpose? and (c) To what extent it will be ranked and how?
- (iv) Since ZBB requires significant support from the top management level which is practically not possible from different sources, its successful implementation practically is very difficult.

- (iv) ZBB involves a lot of training for managers, i.e., if the managers do not understand properly the idea of ZBB, it cannot be successfully implemented.
- (v) Moreover, the determination of performance measures is difficult.

15.11.3 Features of ZBB :

- (i) Before its implementation justify 'why' is it so needed and not 'how' much.
- (ii) All levels of management should participate in the discussion making process.
- (iii) Corporate objectives and individual unit objectives should be linked.

15.12 SUMMARY

Budgeting is an all-important exercise. It pervades all organisations-public and private, government and non-government. A budget is a blueprint for action. It is a quantified plan of action in financial terms. Budgeting is a versatile tool, but it has two main purposes: budgetary planning and budgetary control. In manufacturing organisation the process of budget setting starts with the sales budget. Production budget follows which, in turn, necessitates budget for materials, direct labour, and overheads. These and some other budgets are assembled into a master budget. It becomes a governing document, and virtually a forecasted profit and loss account. Best budgets are the ones which are prepared on standard costs. To be meaningful, budgets have to be flexible rather than static. A flexible budget is prepared for several levels of activity but, at minimum, it is for at least three levels. These are most optimistic, the most pessimistic, and the most likely levels. The two approaches followed in the preparation of flexible budgets are: formula method, and the multiple-activity method. A few noteworthy recent trends in budgeting are towards zero-base budgeting and performance budgeting. The former denotes an operating, planning and budgeting process which requires each manager to justify his entire budget in detail from scratch. The latter refers to a budget which specifies outputs or results to be achieved along with the inputs or expenditures to be incurred during the budget period.

15.13 KEYWORDS

Budget: A budget is a quantitative expression of a plan of action prepared in advance for the period to which it relates.

Budgetary control: Budgetary control is a tool of management used to plan, carryout and control the operations of the business.

Budget centre: It is a section of an organisation defined for the sake of budgetary control.

Cash budget: Cash budget is a summary of the firm's expected cash inflows and

outflows over a particular period of time.

Performance budgeting: Performance budgeting is a process of integrating inputs with outputs of a development programme.

Zero-base budgeting: In zero-base budgeting, the budget is prepared by considering the base for the current year as zero and this eliminates the accrual of inefficiency for preparing future years budget.

15.14 SELF ASSESSMENT QUESTIONS

1. What is budgetary control ? State the main objectives of budgetary control.
2. Explain the term 'Budget' as used in the business. What are the essentials of an effective budget system ?
3. "For planning, the manager wants information about the future, for control about the past". Comment upon this statement and show how can budgeting helps in this respect.
4. "Budgetary control means worrying before work rather than after. Its keynotes are planning, co-ordination and control". Explain this statement.
5. What are functional budgets? Which functional budgets are most commonly used by management.
6. Discuss briefly the procedure for the preparation of a sales budget.
7. Differentiate between Fixed Budgeting and Flexible Budgeting
8. Define Zero-Base Budgeting and distinguish it from traditional budgeting. Enumerate the benefits to be achieved by a business organisation in introducing Zero-Base Budgeting.
9. What do you understand by "Performance Budgeting"? What steps are required to be taken for preparing performance budget?
10. Write short notes on :
 - (a) Budget Committee
 - (b) Zero Base Budgeting
 - (c) Limitations of budgets
 - (d) Master Budget
 - (e) Budget Review
 - (f) Budget Manual
 - (g) Budget Officer

11. From the following budgeted figures, prepare a Cash Budget in respect of three months to June 30.

Months	Sales Rs.	Materials Rs.	Wages Rs.	Overheads Rs.
January	60,000	40,000	11,000	6,200
February	56,000	48,000	11,600	6,600
March	64,000	50,000	12,000	6,800
April	80,000	56,000	12,400	7,200
May	84,000	62,000	13,000	8,600
June	76,000	50,000	14,000	8,000

Expected Cash Balance on 1st April Rs. 20,000. Other information :

(a) Materials and overheads are to be paid during the month following the month of supply.

(b) Wages are to be paid during the month in which they are incurred.

(c) Terms of Sales : The terms of credit sales are payment by the end of the month following the month of sales : $\frac{1}{2}$ of the sales are paid when due, the other half to be paid during the next month.

5% sales commission is to be paid within the month following actual sales.

(d) Preference dividend for Rs. 30,000 is to be paid on 1st May.

(e) Share call money for Rs. 25,000 is due on 1st April and 1st June.

(f) Plant and Machinery worth Rs. 10,000 is to be installed in the month of January and the payment is to be made in the month of June.

12. The expenses budgeted for production of 10,000 units in a factory are furnished below :

Items	Per unit (Rs.)
Materials	70
Labour	25
Variable Overheads	20
Fixed Overheads (direct)	10
Variable Expenses (direct)	5
Selling Expenses (10% fixed)	13
Distribution Expenses (20% fixed)	7
Administration Expenses (Rs. 50,000)	5
Total Cost per unit	155

Prepare a budget for prediction of :

- (a) 6,000 units; and
- (b) 4,000 units.

Assume that administration expenses are rigid for all levels of production.

13. Ram Prasad & Sons Ltd. plans to prepare a Production Budget for its three products A, B and C. The sales for their products is 83,200 units, 72,800 units and 88,400 units respectively. The estimated requirements of inventory both at the beginning and at the end of the budget periods are shown in the following schedule :

	Inventory Schedule		
	Product		
	A	B	C
January 1 (units)	16,000	12,000	20,000
December 31 (units)	28,800	11,160	27,600

You are required to prepare the Production Budget for the Company.

14. West Bengal food Supplies Ltd. forecast their annual sales, 2,00,000 units at Rs. 20 per units. The monthly sales on the basis of an index is expressed as follows :

	Units
January	8,000
February	8,000
March	16,000
April	15,000
May	20,000
June	25,000
July	30,000
August	20,000
September	25,000
October	9,000
November	10,000
December	14,000
	2,00,000

The break-up of monthly sales for 6 months in three different districts shows the following results :

	24 Parghanas	Nadia Hawrah	
January	40%	10%	40%
February	20%	20%	15%
March	25%	30%	30%
April	30%	40%	20%
May	40%	25%	30%
June	30%	20%	25%

Prepare a Sales Forecasts for the 6 months (both in quantity and in value).

15.15 SUGGESTED READINGS

1. Nigam, B.M. Lall and Jain, I.C.; *Cost Accounting*, PHI, New Delhi.
2. Paul, S.Kr.; *Management Accounting*, Central Book Agency, Calcutta.
3. Khan, M.Y. and Jain, P.K.; *Financial Management*, Tata McGraw, New Delhi.
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Lesson : 16

MARGINAL COSTING: BREAK-EVEN ANALYSIS AND DECISION-MAKING

STRUCTURE

- 16.0 Objective
- 16.1 Introduction
- 16.2 The Concept of Marginal Cost
- 16.3 Segregation of semi-variable costs
- 16.4 Contribution
- 16.5 Profit/Volume Ratio (P/V Ratio)
- 16.6 Key Factor
- 16.7 Profit Planning
- 16.8 Break-even Analysis
- 16.9 Concept of Decision-Making
- 16.10 Steps in Decision-Making
- 16.11 Summary
- 16.12 Keywords
- 16.13 Self Assessment Questions
- 16.14 Suggested Readings

16.0 OBJECTIVE

After reading this lesson, you should be able to

- (a) Define marginal cost.
- (b) Explain the methods of segregation of semi-variable cost.

- (c) Discuss the significance of contribution, P/V ratio and key factor.
- (d) State the importance of break-even point.
- (e) Illustrate the managerial applications of marginal costing.

16.1 INTRODUCTION

Marginal costing is a technique where only the variable costs are considered while computing the cost of a product. The fixed costs are met against the total fund arising out of excess of selling price over total variable cost. This fund is known as 'contribution' in marginal costing. According to the Institute of Cost and Management Accountants, London, marginal costing is a technique where "only the variable costs are charged to cost units, the fixed cost attributable being written off in full against the contribution for that period." Thus marginal costing considers only the variable costs while computing the cost of the product. As a matter of fact, it is not a system of cost finding such as job, process or operating costing, but it is a special technique concerned particularly with the effect affixed overheads on running the business. This is being explained in the following pages while explaining the difference between Marginal Costing and Absorption Costing.

16.2 THE CONCEPT OF MARGINAL COST

The technique of Marginal Costing is concerned with "Marginal Cost". It is, therefore, very necessary that the term "Marginal Cost" is correctly understood. According to the Institute of Cost and Management Accountants, London, the term "Marginal Cost" means 'the amounts at any given volume of output by which aggregate costs

are changed if the volume of output is increased/decreased by one unit'. On analyzing this definition we can conclude that the term "Marginal Cost" refers to increase or decrease in the amount of cost on account of increase or decrease of production by a single unit. The unit may be a single article or a batch of similar articles. This will be clear from the following example.

Example: A factory produces 500 fans per annum. The variable cost per fan is Rs. 50. The fixed expenses are Rs. 10,000 per annum. Thus, the cost sheet of 500 fans will appear as follows:

Variable cost (500 × Rs. 50)	Rs. 25,000
Fixed cost	Rs. 10,000
	Rs. 35,000

If production is increased by one unit i.e., it becomes 501 fans per annum, the cost sheet will then appear as follows:

Variable cost (500 × Rs. 50)	Rs. 25,000
Fixed cost	Rs. 10,000
	Rs. 35,000

Marginal cost per unit is, therefore, Rs. 50

Marginal cost is, thus, the total variable cost because within the capacity of the organization, an increase of one unit in production will cause an increase in variable cost only. The variable cost consists of direct materials, direct labour, variable direct expenses and variable overheads. The term "all variable overheads" includes variable overheads plus the variable portion contained in semi-variable overheads. This portion has to be segregated from the total semi-

variable overheads according to the methods discussed later in this lesson.

The Accountant's concept of marginal cost differs from the Economist's concept of marginal cost. According to economists, the cost of producing one additional unit of output is the marginal cost of production. This shall include an element of fixed cost also. Thus, fixed cost is taken into consideration according to economist's concept of marginal cost but not according to accountant's concept. Moreover, the economist's marginal cost per unit cannot be uniform with the additional production since the law of diminishing (or increasing) returns is applicable while accountant's marginal cost shall be constant per unit of output with the additional production.

Illustration 16.1: Following information relates to a factory manufacturing fans:

Producti on in units	Direct material (Rs.)	Direct labour (Rs.)	Other variable costs (Rs.)	Fixed costs (Rs.)	Total costs (Rs.)
500	1000	750	500	1000	3250
1000	2000	1500	1000	1000	5500
1500	3000	2250	1500	1000	7750
2000	4000	3000	2000	1000	10000
2500	5000	3750	2500	1000	12250

Show the effect of increase in output on per unit cost of production and calculate the marginal cost of production.

Solution

Production units	Total variable cost per unit (Rs.)	Fixed cost per unit (Rs.)	Total cost per unit (Rs.)
500	4.50	2.00	6.50
1000	4.50	1.00	5.50
1500	4.50	0.67	5.17
2000	4.50	0.50	5.00
2500	4.50	0.40	4.90

The above table shows that with an increase in production, total cost per unit is decreasing. This is because the fixed overheads are constant at every level and their effect per unit goes on decreasing with increase in volume of output. The marginal cost of production per unit has remained constant and the fixed cost per unit has lowered down from Rs. 2 to Rs. 0.40. This will affect to a great extent firm's decision to increase production in the present illustration. Marginal cost in the present illustration can be calculated with the help of the following formula:

$$\text{Marginal cost} = \text{Direct Material Cost} + \text{Direct Labour Cost} + \text{Other Variable Costs}$$

Or

$$\text{Total Cost} - \text{Fixed Cost}$$

When the production is 500 units, the marginal cost of production shall be equal to Rs. 1,000 + Rs. 750 + Rs. 500, i.e. Rs. 2,250 (or Rs.

3,250 – Rs. 1,000). Marginal cost at other levels of output can be known in the similar fashion.

Illustration 16.2: XYZ Ltd. is currently working at 50% capacity and produces 10,000 units.

1. At 60% working, raw material cost increases by 2% and selling price falls by 2 per cent. At 80 per cent working, raw material cost increases by 5 per cent and selling price falls by 5 per cent.
2. At 50% capacity working, the product costs Rs. 180 per unit and is sold at Rs. 200 per unit.

The unit cost of Rs. 180 is made up as follows:

Material	Rs. 100
Wages	Rs. 30
Factory overheads	Rs. 30 (40% fixed)
Administration overheads	Rs. 20 (50% fixed)

Prepare a marginal cost statement showing the estimated profit of the business when it is operated at 60% and 80% capacity.

Solution

MARGINAL COST STATEMENT

Particulars	60% capacity output		80% capacity output	
	12,000 units		16,000 units	
	Total	Per unit	Total	Per unit
Material	12,24,000	102	16,80,000	105
Wages	3,60,000	30	4,80,000	30
Variable factory overheads	2,16,000	18	2,88,000	18

Variable administration overheads		1,20,000	10	1,60,000	10
Total M. cost	(i)	19,20,000	160	26,08,000	163
Sales	(ii)	23,52,000	196	30,40,000	190
Contribution	(iii)	4,32,000	36	4,32,000	27
Fixed factory Overheads		1,20,000	10	1,20,000	7.50
Fixed admn. Overheads		1,00,000	8.23	1,00,000	6.25
Fixed costs	(iv)	2,20,000	18.23	2,20,000	13.75
Net Profit	((iii) – (iv))	2,12,000	17.77	2,12,000	13.25

Working notes

(i) Material cost per unit at 50% capacity	Rs. 100.00
Add: 2% at 60% capacity	2.00
Material cost per unit at 60% capacity	Rs. 102.00
(ii) Material cost at 50% capacity	Rs. 100.00
Add: 5% at 80% capacity	5.00
Material cost per unit at 80% capacity	Rs. 105.00
(iii) Selling price per unit at 50% capacity	Rs. 200.00
Less: 2% at 60% capacity	4.00
Selling price at 60% capacity	Rs. 196.00
(iv) Selling price per unit at 50% capacity	Rs. 200.00
Less: 5% at 80% capacity	10.00
Selling price at 80%	Rs. 190.00
(v) Variable factory overheads:	
Factory overheads per unit at 50% capacity	Rs. 30.00
Less: Fixed factory overheads	12.00
Variable factory overheads per unit	Rs. 18.00
Total fixed factory overheads (Rs. 12×10,000)	Rs. 1,20,000.00

(vi) Variable administration overheads:

Administration overheads per unit	Rs. 20.00
Less: Fixed administration overheads per unit	Rs. 10.00
Variable administration overheads per unit	<u>Rs. 10.00</u>
Total fixed administration overheads	<u>Rs. 1,00,000.00</u>

(Rs. 10×10,000)

16.3 SEGREGATION OF SEMI-VARIABLE COSTS

Marginal costing requires segregation of all costs between two parts fixed and variable. This means that the semi-variable cost will have to be segregated into fixed and variable elements. This may be done by any one of the following methods:

1. Levels of output compared to levels of expenses method,
2. Range method,
3. Degree of variability method,
4. Scatter graph method,
5. Least squared method.

Each of the above methods has been discussed in detail with the help of the following illustration:

Illustration 16.3

	Production Units	Semi-variable expenses
July 2005	50	150
August 2005	30	132
September 2005	80	200
October 2005	60	170

November 2005	100	230
December 2005	70	190

During the month of January, 2006, the production is 40 units only. Calculate the amount of fixed, variable and total semi-variable expenses for the month.

1. Levels of output compared to levels of expenses

method: According to this method, the output at two different levels is compared with corresponding level of expenses. Since the fixed expenses remain constant, the variable overheads are arrived at by the ratio of change in expense to change in output.

Solution: Taking the figures of the month of September and November of the illustration given below:

Month	Production units	Semi-variable expenses (Rs.)	Fixed (Rs.)	Variable (Rs.)
September	80	200	80*	120*
November	100	230	80**	150**
Difference	20	Rs. 30		

Therefore, variable element would be

$$= \frac{\text{Change in amount of expense}}{\text{Change in activity or quantity}}$$

$$= \frac{30}{20} = \text{Rs. 1.50 per unit}$$

* Variable overheads for September = 80 × Rs. 1.50 = 120

Fixed overheads for September = Rs. 200 – Rs. 120 = Rs. 80

** Similarly, Overheads for
November have been computed

Variable overheads for January	40×Rs. 1.50	=	Rs. 60
Fixed overheads			Rs. 80
Total semi-variable overheads			<u>Rs. 230</u>

2. Range method: This method is similar to the previous method except that only the highest and lowest points of output are considered out of various levels. This method is also designated as 'high and low' method.

Solution: The highest production in the illustration is in the month of November while the lowest is in the month of August. The figures of these two months, therefore, have been taken.

Month	Production units	Semi-variable expenses (Rs.)	Fixed (Rs.)	Variable (Rs.)
August	30	132	90*	42*
November	100	230	90**	140**
Difference	70	98		

Variable element: $98/70$ = Rs. 1.4 per unit

* Variable overheads for August = $30 \times \text{Rs. } 1.4 = \text{Rs. } 42$

Fixed overheads for August = $132 - \text{Rs. } 42 = \text{Rs. } 90$

**Similarly, the fixed and variable overheads for November have been found out.

Variable overheads for January	= $40 \times \text{Rs. } 1.4 = \text{Rs. } 56/-$
Fixed overheads	Rs. 90
Total semi-variable overheads	Rs. 146

3. Degree of variability method: In this method, degree of variability is noted for each item of semi-variable expense. Some semi-variable items may have 30% variability while others may have 70% variability. The method is easy to apply but difficulty is faced in determining the degree of variability.

Solution: Assuming that degree of variability is 60% in semi-variable expenses and taking the month of October as basis, the analysis shall be as under:

$$\text{Variable element} = (60\% \text{ of Rs. } 170), \text{ i.e. Rs. } 102$$

$$\text{Fixed element} = \text{Rs. } 170 - 102 = \text{Rs. } 68.$$

On the basis of the variable expenses of Rs. 102 for the production of 60 units the variable expenses for 40 units (the production for January 2002) will be:

$$\text{Rs. } \frac{102}{60} \times 40 = \text{Rs. } 68.$$

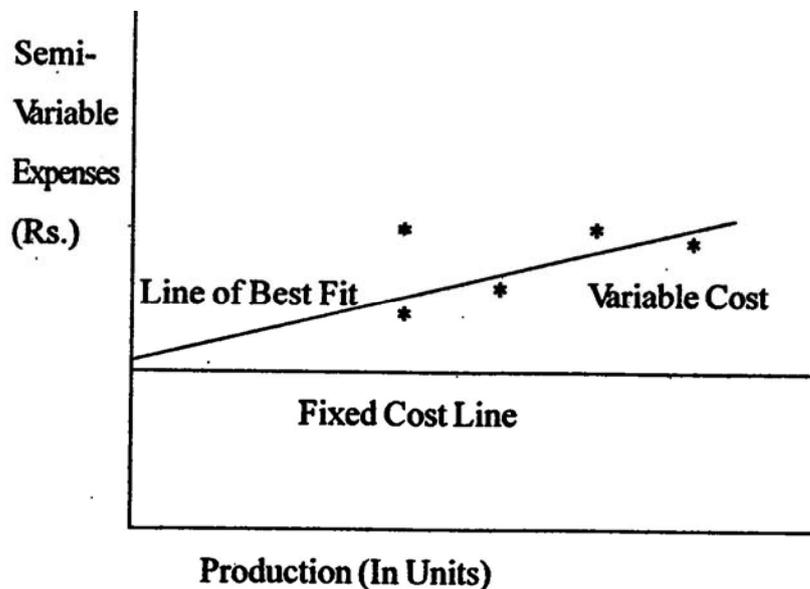
Hence, the total Semi-variable expenses for January, 2005 will be equal to Rs. 68 + Rs. 68 i.e., Rs. 136.

4. Scattered-graph method: In this method the given data are plotted on a graph paper and line of best fit is drawn. The method is explained below:

- (i) The volume of production is plotted on the horizontal axis and the costs are plotted on the vertical axis.

- (ii) Corresponding to each volume of production are then plotted on the paper, thus, several point are shown on it.
- (iii) A straight line of best fit is then drawn through the point plotted. This is the total cost line. The point where this line interests the vertical axis is taken to be amount of fixed element.
- (iv) A line parallel to the horizontal axis is drawn from the point where the line of best fit intersects the vertical axis. This is the fixed cost time.
- (v) The variable cost at any level can be known by noting difference between fixed cost and total cost lines.

Solution



An inspection of the above graph tells us that fixed expenses are Rs. 85 approximately.

For the month of January, 2006, the semi-variable expenses (see Graph) are Rs. 143 and, therefore, the variable expenses are Rs. 58 (Rs. 143-85).

5. Method of least squares: This method is based on the mathematical technique of fitting an equation with the help of a number of observations. The linear equation, i.e., a straight line equation, can be assumed as:

$$y = a + bx \text{ and the various sub-equations shall be}$$

$$ey = na + bex;$$

$$exy = aex + bex^2$$

An equation of second order, i.e., a curvilinear equation can be drawn as $y = a + bx + cx^2$ and the various sub-equations to solve it (i.e., to find out the values of constants a, b and c, shall be:

$$Ey = naq + bex^2:$$

$$Exy = aex + bex^2 + cex^3;$$

$$Ex^2y = aex^2 + bex^3 + cex^4.$$

Similarly, the equation can be fitted for any number of order or degree depending upon the number of observations available and the accuracy desired.

Solution: A linear equation can be obtained with the help of the following values, thus:

Months	Production (Units)	Expenses (Rs.)		
Year 2005	x	y	x²	xy
July	50	150	2,500	7,500

August	30	132	900	3,960
September	80	200	6400	16,000
October	60	170	3600	10,200
November	100	230	10,000	23,000
December	70	190	4,900	13,300
Total	ex = 390	ey = 1,072	ex ² = 28,300	exy = 73,960

Assuming, the equation as $y = a + bx$, we have to find the values of constants a and b with the help of above figures. The other two equations are:

$$ey = na + bex \quad \dots (i)$$

$$exy = ax + bex^2 \quad \dots (ii)$$

Putting the values in these equations, we have

$$1,072 = 6a + 390 b \quad \dots (iii)$$

$$73,960 = 390 a + 28,300 b \quad \dots (iv)$$

Multiplying equation (iii) by 65 and deducting it from (iv), we get

$$4,280 = 2,950 b; \quad : \quad b = 1.45 \text{ (approx)}$$

Putting the values of b in equation (iii), we can know the value of a :

$$a = \frac{1072 - (390 \times 1.45)}{6} = 84.42 \text{ (approx)}$$

The desired equation is:

$$Y = 84.42 + 1.45x$$

Where Rs. 84.42 is the amount of fixed element and Rs. 1.45 is the rate per unit for variable element.

Putting the value of x , i.e., 40 units for January, 2006, we get the total semi-variable expenses for the month as

$$\text{Rs. } 84.42 + (\text{Rs. } 1.45 \times 40), \text{ i.e., Rs. } 142.42.$$

16.4 CONTRIBUTION

As stated earlier, the difference between selling price and variable cost (i.e., the marginal cost) is known as 'Contribution' or 'Gross Margin'. In other words, fixed costs plus the amount of profit is equivalent to contribution. It can be expressed by the following formula:

$$\text{Contribution} = \text{Selling Price} - \text{Variable Cost}$$

Or

$$\text{Fixed Cost} + \text{Profit}$$

We can derive from it that profit cannot result unless contribution exceeds fixed costs. In other words, the point of no profit no loss shall be arrived at where contribution is equal to fixed costs.

Example

Variable cost	=	Rs. 50,000
Fixed cost	=	Rs. 20,000
Selling price	=	Selling price – Variable cost
	=	Rs. 80,000 – Rs. 50,000 = Rs. 30,000
Profit	=	Contribution – Fixed cost
	=	Rs. 30,000 – Rs. 20,000 = Rs. 10,000

Hence, contribution exceeds fixed cost and, therefore, the profit is of the magnitude of Rs. 10,000. Suppose the fixed cost is Rs. 40,000 then the position shall be

$$\begin{aligned} \text{Contribution} - \text{Fixed cost} &= \text{Profit} \\ &= \text{Rs. } 30,000 - \text{Rs. } 40,000 = (-) \text{Rs. } 10,000 \end{aligned}$$

The amount of Rs. 10,000 represents the extent of loss since the fixed costs are more than the contribution. At the level of fixed cost of Rs. 30,000, there shall be no profit and no loss. The concept of the break-even analysis emerge out of this theory.

16.5 PROFIT/VOLUME RATIO (P/V RATIO)

This term is important for studying the profitability of operations of a business. Profit-volume ratio establishes its relationship between the contribution and the sale value. The ratio can be shown in the form of a percentage also. The formula can be expressed thus:

$$\text{P/V Ratio} = \frac{\text{Contribution}}{\text{Sales}} = \frac{\text{Sales} - \text{Variable Costs}}{\text{Sales}}$$

$$\text{Or } C/S = \frac{S - V}{S} \quad \text{or} \quad 1 - \frac{\text{Variable Costs}}{\text{Sales}}$$

This ratio can also be called as 'Contribution/Sales' ratio. This ratio can also be known by comparing the change in contribution to change in sales or change in profit to change in sales. Any increase in contribution would mean increase in profit only because fixed costs are assumed to be constant at all levels of production. Thus,

$$\text{P/V Ratio} = \frac{\text{Change in Contribution}}{\text{Change in Sales}} \quad \text{or} \quad \frac{\text{Change in profits}}{\text{Change in sales}}$$

This ratio would remain constant at different levels of production since variable costs as a proportion to sales remain constant at various levels.

Example

Sales	Rs. 2,00,000
Variable Costs	Rs. 1,20,000
Fixed Costs	40,000

$$\text{P/V Ratio} = \frac{\text{Rs. 2,00,000} - \text{Rs. 1,20,000}}{\text{Rs. 2,00,000}}$$

$$= 0.4 \text{ or } 40\%$$

The ratio is useful for the determination of the desired level of output or profit and for the calculation of variable costs for any volume of sale. The variable costs can be expressed as under:

$$\text{VC} = \text{S}(1 - \text{P/V ratio})$$

In the above example

If we know the P/V ratio and sales before hand, the variable costs can be computed as follows:

$$\begin{aligned} \text{Variable Costs} &= 1 - 0.4 = 0.6, \quad \text{i.e., } 60\% \text{ of sales} \\ &= 1,20,000 \text{ (60\% of Rs. 2,00,000)} \end{aligned}$$

Alternatively, by the formula $\text{S} - \text{V}$

$$\text{Since P/V ratio} = \frac{S - V}{S} = S \times \text{P/V Ratio}$$

$$\text{Or } V = S - S \times \text{P/V ratio or } S (1 - \text{P/V ratio}).$$

Comparison of different P/V ratios is usually made by the management to find out which product is more profitable. Management tries to increase the value of the ratio by reducing the variable cost or by increasing the selling prices.

16.6 KEY FACTOR

Key factor is that factor which limits the volume of output in the activities of an undertaking at a particular point of time or over a period. The extent of its influence must be assessed first so as to maximize the profits. Generally on the basis of contribution, the decision regarding product mix is taken. It is not the maximization of total contribution that matters, but the contribution in terms of the key factor that is to be compared for relative profitability. Thus, it is the limiting factor or the governing factor or principal budget factor. If sales cannot exceed a given quantity, sales is regarded as the key factor; if production capacity is limited, contribution per unit i.e., in terms of output, has to be compared. If raw material is in short supply, contribution has to be expressed in relation to per unit of raw material required. There may be labour shortage and in such a case contribution per labour is to be known. If machine capacity is a limitation, contribution per machine hour is to be considered for appropriate decision making. Thus, profitability can be measured by:

$$\frac{\text{Contribution}}{\text{Key factor}}$$

The following illustration would clearly show how key factor affects the relative profitability of difference products.

Illustration 16.4: Comments on the relative profitability of the following two products:

	Production cost per unit	
	Product A	Product B
Materials	Rs. 200	Rs. 150
Wages	100	200
Fixed overhead	350	100
Variable overhead	150	200
Profit	200	350
Selling price	1000	1000
Output per week	200 Units	100 Units

Solution

COMPARATIVE STATEMENT OF PROFITABILITY

	Product A	Product B
Sale price per unit	Rs. 1,000	Rs. 1,000
Less: Variable cost per unit	450	550
Contribution per unit	550	450
Less: Fixed cost per unit	350	100
Profit per unit	200	350
Total Profit	40,000	35,000
P/V ratio	55%	45%

Contribution per unit and total profit is higher in case of product A, though profit per unit of product B is higher. If output in terms of

units is the limiting factor, product A is more profitable. In case there is no limit regarding units of output product B would prove to be more profitable. Similarly, in case there is any other key factor, contribution has to be expressed in relation to that factor and decision has to be taken on that basis.

16.7 PROFIT PLANNING

The basic objective of running any business organization is to earn profits. Profits determine the financial position, liquidity and solvency of the company. Profits serve as a yardstick for judging the competence and efficiency of the management. Profit planning is, therefore, a fundamental part of the overall management function and is a vital part of the total budgeting process. The management determines the profit goals and prepares budgets that will lead them to the realization of these goals. Profit planning can be done only when the management has the information about the cost of the product, both fixed and variable, and the selling price at which it will be in a position to sell the products of the company. The management extensively applies the concept of Marginal Costing as explained in the preceding pages in profit planning.

The profit is affected by the several factors. Some of the important factors are as follows:

- (i) Selling price of the products.
- (ii) Volume of sales.
- (iii) Variable costs per unit.
- (iv) Total fixed costs.
- (v) Sales makes (or mix) of the different products.

The management can achieve their target profit goal by varying one or more of the above variables. This will be clear with the help of the following illustration:

Illustration 16.5: A firm has Rs. 10,00,000 invested in its plant and sets a goal of a 15% annual return on investment. Fixed costs in the factory presently amount to Rs. 4,00,000 per year and variable costs amount to Rs. 15 per unit produced. In the past year the firm produced and sold 50,000/- units at Rs. 25 each and earned a profit of Rs. 1,00,000. How can management achieve their target profit goal by varying different variables like fixed costs, variable costs, quantity sold or increasing the selling price per unit?

Solution: Profit to be earned is Rs. 1,50,000 (i.e. 15% of Rs. 10,00,000).

The equation of profit can be put as follows:

$$\text{Profit} = (\text{Quantity} \times \text{S.P. per unit}) - (\text{Quantity} \times \text{variable cost per unit}) - \text{Fixed costs.}$$

(i) Achievement of target profit by varying fixed costs:

Let the fixed costs be X

$$1,50,000 = (50,000 \times \text{Rs. } 25) - (50,000 \times \text{Rs. } 15) - X$$

$$\text{or } 1,50,000 = (\text{Rs. } 12,50,000) - (\text{Rs. } 7,50,000) - X$$

$$X = \text{Rs. } 12,50,000 - 7,50,000 - 1,50,000$$

$$X = \text{Rs. } 3,50,000.$$

The present fixed costs are Rs. 4,00,000. The management can earn the target profit of Rs. 1,50,000 by reducing the fixed costs by Rs. 50,000 (i.e. Rs. 4,00,000 – Rs. 3,50,000).

(ii) Achievement of the target profit by varying variable costs:

Let the variable cost be X per unit.

$$\text{Rs. } 1,50,000 = (50,000 \times \text{Rs. } 25) - (50,000 \times X) - \text{Rs. } 4,00,000$$

$$\text{Or } 1,50,000 = \text{Rs. } 12,50,000 - 50,000 X - \text{Rs. } 4,00,000$$

$$\text{Or } 50,000 X = \text{Rs. } 12,50,000 - \text{Rs. } 4,00,000 - \text{Rs. } 1,50,000$$

$$\text{Or } 50,000 X = 7,00,000$$

$$\text{Or } X = 14$$

The present variable cost per unit is Rs. 15 per unit. The management can earn the target profit of Rs. 1,50,000 by reducing the variable cost by Re. 1 per unit (i.e. Rs. 15 – Rs. 14).

(iii) Achievement of the target profit by varying quantity sold:

Let the quantity sold be X

$$\text{Rs. } 1,50,000 = (X \times \text{Rs. } 25) - (X \times \text{Rs. } 15) - \text{Rs. } 4,00,000$$

$$\text{Or } 1,50,000 = 25 X - 15 X - \text{Rs. } 4,00,000$$

$$\text{Or } 10 X = 5,50,000$$

$$X = 55,000$$

The present sales are 50,000 units. The management can earn the target profit of Rs. 1,50,000 by increasing the units sold by 5,000.

(iv) Achievement of the target profit by varying selling price:

Let the selling price be X

$$\text{Rs. } 1,50,000 = (50,000 \times X) - (50,000 \times \text{Rs. } 15) - \text{Rs. } 4,00,000$$

$$\text{Or } 1,50,000 = (50,000 X - \text{Rs. } 7,50,000 - \text{Rs. } 4,00,000)$$

$$\text{Or } - 50,000 X = - 7,50,000 - \text{Rs. } 4,00,000 - 1,50,000$$

$$\text{Or } - 50,000 X = 13,00,000$$

$$X = 26$$

The present selling price is Rs. 25 per unit. The management can earn the target profit of Rs. 1,50,000 by increasing the selling price by Re. 1 per unit.

16.8 BREAK-EVEN ANALYSIS

The narrower interpretation of the term break-even analysis refers to a system of determination of that level of activity where total cost equals total selling price. The broader interpretation refers to that system of analysis which determines the probable profit at any level of activity. The relationship among cost of production, volume of production, the profit and the sales value is established by break-even analysis. Hence, this analysis is also designated as 'Cost-volume-profit' analysis.

Such an analysis is useful to the management accountant in the following respects:

- (i) It helps him in forecasting the profit fairly accurately.
- (ii) It is helpful in setting up flexible budgets, since on the basis of this relationship, he can ascertain the costs, sales and profits at different levels of activity.
- (iii) It also assists him in performance evaluation for purposes of management control.
- (iv) It helps in formulating price policy by projecting the effect, which different price structures will have on cost and profits.
- (v) It helps in determining the amount of overhead cost to be charged at various levels of operations, since overhead rates are generally pre-determined on the basis of a selected volume of production.

Thus, cost volume-profit analysis is an important media through which the management can have an insight into effects on profit on account of variations in costs (both fixed and variable) and sales (both volume and value) and take appropriate decisions.

Break-even point

The point, which breaks the total cost and the selling price evenly to show the level of output or sales at which there shall be neither profit nor loss, is regarded as break-even point. At this point, the income of the business exactly equals its expenditure. If production is enhanced

beyond this level, profit shall accrue to the business, and if it is decreased from this level, loss shall be suffered by the business.

It will be proper here to understand different concepts regarding marginal cost and break-even point before proceeding further. This has been explained below:

$$\begin{aligned}
 \text{Marginal cost} &= \text{Total variable cost} \\
 \text{Or} &= \text{Total cost} - \text{Fixed cost} \\
 \text{Or} &= \text{Direct Material} + \text{Direct labour} \\
 &\quad + \text{Direct Expenses (Variable)} \\
 &\quad + \text{Variable overheads} \\
 \text{Contribution} &= \text{Selling Price} - \text{Variable cost} \\
 \text{Profit} &= \text{Contribution} - \text{Fixed cost} \\
 \text{Fixed cost} &= \text{Contribution} - \text{Profit} \\
 \text{Contribution} &= \text{Fixed cost} + \text{Profit} \\
 \text{Profit/Volume Ratio} &= \frac{\text{Contribution per unit}}{\text{Selling price per unit}} \\
 \text{Or} &= \frac{\text{Total contribution}}{\text{Total sales}}
 \end{aligned}$$

In case P/V ratio is to be expressed as a percentage of sales, 100 as given above should multiply the figure derived from the formulae.

$$\begin{aligned}
 \text{Break-even point} &= \frac{\text{Fixed cost}}{\text{Contribution per unit}} \\
 \text{Or} &= \frac{\text{Fixed cost}}{\text{Total contribution}} \times \text{Total Sales} \\
 \text{Or} &= 1 - \frac{\text{Fixed cost}}{\text{Variable cost per unit} + \text{Selling price per unit}}
 \end{aligned}$$

$$\text{Or} \qquad \qquad \qquad = \qquad \frac{\text{Fixed cost}}{\text{P/V Ratio}}$$

At break-even point the desired profit is zero, in case the volume of output of sales is to be computed for 'a desired profit', the amount of 'desired profit' should be added to Fixed Costs in the formulae given above. For example:

$$\text{Units for a desired profit} \qquad = \qquad \frac{\text{Fixed cost} + \text{Desired profit}}{\text{Contribution per unit}}$$

$$\text{Sales for a desired profit} \qquad = \qquad \frac{\text{Fixed cost} + \text{Desired profit}}{\text{P/V Ratio}}$$

This will be clear from the following illustrations:

Illustration 16.6: A factory manufacturing sewing machines has the capacity to produce 500 machines per annum. The marginal (variable) cost of each machine is Rs. 200 and each machine is sold for Rs. 250. Fixed overheads are Rs. 12,000 per annum. Calculate the break-even points for output and sales and show what profit will result if output is 90% of capacity?

Solution: Contribution per machine is Rs. 250 – Rs. 200 = Rs. 50.

Break-even point for output (Output, which will give 'contribution' equal to fixed costs Rs. 12,000)

$$\text{B.E.P. for output} = \frac{\text{Total fixed cost}}{\text{Contribution per unit}}$$

$$= \frac{12,000}{50} = 240 \text{ machines}$$

Break-even point for sales

$$= \text{Output} \times \text{Selling price per unit}$$

$$= 240 \times \text{Rs. } 250 = \text{Rs. } 60,000$$

Break-even point for sales can also be calculated with the help of any of the following formulae:

$$(i) \quad \text{B.E.P.} = 1 - \frac{\text{Total fixed cost}}{\frac{\text{Variable cost per unit}}{\text{Selling price per unit}}}$$

$$= 1 - \frac{\frac{12,000}{200}}{250}$$
$$= \frac{12,000}{\frac{1}{5}} = \text{Rs. } 60,000$$

or

$$\text{B.E.P.} = \frac{\text{Total fixed cost} \times \text{Selling price per unit}}{\text{Contribution per unit}}$$
$$= \frac{12,000 \times 250}{50} = \text{Rs. } 60,000$$

or

$$\text{B.E.P.} = \frac{\text{Total fixed Cost} \times \text{Total sales}}{\text{Total contribution}}$$
$$= \frac{12,000 \times 1,25,000}{25,000} = \text{Rs. } 60,000$$

or

$$\text{B.E.P.} = \frac{\text{Total fixed cost}}{\text{P/V Ratio}}$$
$$= \frac{12,000}{20\%} = \text{Rs. } 60,000$$

$$\text{P.V. Ratio} = \frac{\text{Contribution}}{\text{Sales}} \times 100 = \frac{25,000}{1,25,000} \times 100 = 20\%$$

Profit at 90% of the capacity has been calculated as follows:

Capacity	500 machines
Output at 90% capacity	450 machines
Break-even point of output	240 machines

Since fixed overheads will be recovered in full at the break-even point, the entire contribution beyond the break-even point will be the profit. The profit on 450 units, therefore, will be:

$$\text{Rs. } 50 \times (450-240) = \text{Rs. } 10,500$$

Illustration 16.7: The following are the budgeted data of Jai Hind Company:

Sales (15,000 units @ Rs. 5)		Rs. 75,000
Less: Fixed costs	Rs. 28,000	
Variable costs	15,000	Rs. 43,000
Operating profit		32,000
Add: Other incomes	9,000	
Less: Other expenses	3,000	6,000
Net profit		38,000

How would you compute break-even points?

Solution: It is advisable to compute separate break-even points (i) omitting other incomes and expenses, and (ii) including other incomes and expenses, for management decision.

- (i) When other incomes and expenses are not taken into consideration:

$$\begin{aligned} \text{BEP} &= 1 - \frac{\text{Fixed cost}}{\text{Sales} - \text{Variable cost}} \\ &= \frac{28,000}{1 - \frac{15,000}{75,000}} = \frac{28,000}{0.80} = \text{Rs. } 35,000 \end{aligned}$$

- (ii) When other incomes and expenses are taken into consideration:

$$\begin{aligned} \text{BEP} &= 1 - \frac{\text{Fixed cost} - \text{Other incomes}}{\text{Sales} - \text{Variable cost}} \\ &= \frac{28,000 - 6,000}{1 - \frac{15,000}{75,000}} = \frac{22,000}{0.80} = \text{Rs. } 27,500 \end{aligned}$$

16.9 CONCEPT OF DECISION-MAKING

Decision-making is the essence of management since it may make the success of the business as a whole. In general, it means taking the final step in deliberations before acting. In management terms it has a specific meaning. It means the process of choosing among alternative courses of action, since if there is no choice; there is no decision to make. Moreover, since business takes place in a probabilistic world, every management decision deals with the future-whether it be ten seconds ahead (the decision to adjust a dial), or eighty years ahead (the decision to locate the factory). A decision always involves a prediction.

The function of decision maker is, therefore, to select courses of action for the future. There is no opportunity to alter the past.

Future is risky: Of course, routine decisions do not involve much of risk. However, most of the top management decisions are not of a routine nature. They are generally of a crucial and critical nature on account of their requiring huge investments and involving many uncertainties. But they cannot be avoided. The Executive has taken them. It has been correctly observed: “Uncertainty is his (executive’s) opponent, overcoming it his mission. Whether the outcome is a consequence of luck or wisdom, the moment of decision is without doubt the most creative event in the life of the executive”.

Concept of Relevant Costs

It has already been stated that for managerial decision-making the decision-maker must make use of relevant costs. The term ‘relevant’ mean pertinent to decision at hand. Costs are relevant if they guide the executive towards the decision that harmonies with top management’s objectives. It will be ideal if the costs are not only relevant or pertinent but also accurate or precise.

It may be noted that ‘relevance’ and ‘accuracy’ are not identical concepts. Costs may be accurate but irrelevant or inaccurate but relevant. For example, the sales manager’s salary may be precisely Rs.60,500 per annum, however, this fact has no relevance in deciding whether to add or drop a production line.

The following are the two fundamental characteristics of relevant cost.

(i) They are future costs: Of course, all future costs are not relevant to alternative choice decisions but all costs are not relevant unless they are future. This is because past costs are the result of past decisions and no current or future decision can change what has already happened. For example, a company has to decide whether or not to accept an order for a particular product. In calculating the cost of this product to see if the order would benefit the company financially, the company uses the expected cost at the time when intends to produce the product. This could be quite different from the latest historical cost or standard cost. Thus, in forward decision-making, data regarding historical or standard cost is useful only as a basis for estimating future costs.

(ii) They differ between alternatives: As stated above all future costs are not relevant for decision-making. Only such future costs are relevant which may be expected to differ between alternatives. Those costs, which will not change between different alternatives, are to be ignored. For example a company is considering the substitution of an automatic process in place of a slow manual process. The material consumption per unit would be Rs. 2 under both the processes but the conversion cost would be Rs. 3 per unit under the new process in place of Rs. 5 under the present process. In this case relevant cost for decision-making is not the material cost, which will not change, but the conversion cost, which will change. The cost of material should, therefore, be ignored. Conversion cost should only be considered. The proposal for automatic process should therefore be accepted since it will result in saving of Rs. 2 per unit.

Concept of Differential Costs

The term differential cost means difference in cost between alternatives. It satisfies both the conditions necessary for relevant costs, i.e., it is a future cost as well as it changes between alternatives. Mr. J.M. Clark has described the concept of differential costs as follows:

“When a decision has to be made involving an increase or decrease of n-units of output, the difference in costs between two policies may be considered to be the cost really incurred on account of these n units of business, or of any similar units. This may be called the differential cost of a given amount of business. It represents the cost that must be incurred if that business is taken and which need not be incurred if that business is not taken”.

Since the management’s objective is to maximize the profit (or minimize the loss) of the firm, a comparison is made of differential costs with differential revenue under the available alternatives, to find out the most favourable alternative that will give the maximum possible return of the incremental capital employed in the business.

16.10 STEPS IN DECISION-MAKING

Rational decision-making requires the taking of the following steps:

- 1. Defining the problem:** The problem must be clearly and precisely defined so that quantitative amounts that are relevant to its solution can be determined.

2. Identifying alternatives: The possible alternative solutions to the problem should be identified. Sometimes consideration of more alternative solutions may make the matters more complex. In order to do away with this difficulty, after having identifies all alternatives, the analysts should eliminate on a judgment basis those that are clearly unattractive. A detailed analysis of the remaining alternatives should then be done.

3. Evaluating quantitative factors: Each alternative is usually associated with a number of advantages (relevant revenues) and disadvantages (relevant costs). The decision-maker should evaluate each of the relevant factors in quantitative terms to determine the largest net advantage.

4. Evaluating qualitative factors: In most cases the advantages and disadvantages associated with each alternative are capable of being easily expressed in quantitative terms. However, in certain cases there may be qualitative factors associated with certain alternatives, which may not be capable of being expressed easily and correctly in quantitative terms. Evaluating such qualitative factors against the quantitative factors depends on the judgment of the decision-maker. Sometimes on account of a single qualitative factor, which though cannot be measured exactly and easily in monetary terms, the decision may just be reverse than what it was generally expected to be. For example, it is a known fact that many persons can meet their transportation needs less expensively by using public conveyances rather than by operating their own automobiles. In spite of this people own and use their own automobiles for reasons of prestige,

convenience, or other factors, which cannot be measured in quantitative terms.

5. Obtaining additional information: In case the decision-maker feels necessary, he may ask for additional information. As a matter of fact many decisions could be improved by obtaining additional information and it is usually possible to obtain such information.

6. Selection of an alternative: After having identifying, evaluating, weighing and obtaining additional information (if necessary), the decision-maker can select the alternative and act on it.

7. Appraisal of the results: Having implemented his decision, the decision-maker should also from time to time carry out an appraisal of the results. This will help him in correcting his mistakes, revising his targets and making better predictions in the times to come.

In the following pages we shall explain how the above steps/rules are taken/applied in making decisions relating to each of the following matters.

- (i) Determination of sales mix;
- (ii) Exploring new markets;
- (iii) Discontinuance of a production line;
- (iv) Make or buy decisions;
- (v) Equipment replacement decision;
- (vi) Investment in asset;
- (vii) Change versus status quo;
- (viii) Expand or contract.

Determination of sales mix

Presuming that fixed costs will remain unaffected decision regarding sales/production mix decision is taken on the basis of the contribution per unit of each product. The product which gives the highest contribution should be given the highest priority and the product whose contribution is the least, should be given the least priority. A product giving a negative contribution should be discontinued or given up unless there are other reasons to continue its production.

Illustration 16.8: Following information has been made available from the cost records of United Automobiles Ltd., manufacturing spare parts:

Direct materials	Per unit
X	Rs. 8
Y	Rs. 6
Direct wages	
X	24 hours @ 25 paise per hour
Y	16 hours @ 25 paise per hour
Variable overheads	150% of direct wages
Fixed overheads (total)	Rs. 750
Selling price	
X	Rs. 25
Y	Rs. 20

The directors want to be acquainted with the desirability of adopting any one of the following alternative sales mixes in the budget for the next period.

- (a) 250 units of X and 250 units of Y.
- (b) 400 units of Y only.
- (c) 400 units of X and 100 units of Y.
- (d) 150 units of X and 350 units of Y.

State which of the alternative sales mixes you would recommend to the management.

Solution:

MARGINAL COST STATEMENT (PER UNIT)

	Products	
	X	Y
Direct materials	8	6
Direct wages	6	4
Variable overheads	9	6
Marginal cost	23	16
Contribution	2	4
Selling price	25	20

Selection of sales alternative

- (a) 250 units of X and 250 units of Y

Contribution:

Product X 250 units × 2	Rs. 500
Product Y 250 units × 4	1000
	1500
Less: Fixed overheads	750
Profit	750

- (b) 400 units of product Y only

Contribution 400×4	Rs. 1600
Less: Fixed overheads	750
Profit	<u>850</u>

(c) 400 units of X and 100 units of Y

Contribution:

Product X 400×2	Rs. 800
Product Y 100×4	400
	<u>1200</u>
Less: Fixed overheads	750
Profit	<u>450</u>

(d) 150 units of X and 350 units of Y

Contribution:

Product X 150×2	Rs. 300
Product Y 350×4	1400
	<u>1750</u>
Less: Fixed overheads	750
Profit	<u>950</u>

The alternative (d) is most profitable since it gives the maximum profit of Rs. 950.

Exploring new markets

Decision regarding selling goods in a new market (whether Indian or foreign) should be taken after considering the following factors:

- (i) Whether the firm has surplus capacity to meet the new demand?

- (ii) What price is being offered by the new market? In any case, it should be higher than the variable cost of the product plus any additional expenditure to be incurred to meet the specific requirements of the new market.
- (iii) Whether the sale of goods in the new market will affect the present market for the goods? It is particularly true in case of sale of goods in a foreign market at a price lower than the domestic market price. Before accepting such an order from a foreign buyer, must be seen that the goods sold are not dumped in the domestic market itself.

Illustration 16.9: A company annually manufactures 10000 units of a product at a cost of Rs. 4 per unit and there is home market for consuming the entire volume of production at the sale price of Rs. 4.25 per unit. In the year 2005, there is a fall in the demand for home market, which can consume 10000 units only at a sale price of Rs. 3.72 per unit. The analysis of the cost per 10000 units is:

Materials	Rs. 15,000
Wages	11,000
Fixed overheads	8,000
Variable overheads	6,000

The foreign market is explored and it is found that this market can consume 20,000 units of the product if offered at a sale price of Rs. 3.55 per unit. It is also discovered that for additional 10,000 units of the product (over initial 10,000 units) the fixed overheads will increase by 10 per unit. It is worthwhile to try to capture the foreign market?

Solution: Statement showing the advisability of selling goods in Foreign Market

	Home market 10000 units		Foreign market 20000 units	Total 30000 units
	Home market			
	Year 2004	Year 2005		
Material	15000	15000	30000	45000
Wages	11000	11000	22000	33000
Overheads:				
Fixed	8000	8000	1600	9600
Variable	6000	6000	12000	18000
Total cost	40000	40000	65600	105600
Profit	2500	2800	5400	2600
Sales	42500	37200	71000	108200

From the above it is clear that it is advisable to sell goods in the foreign market. It will compensate not only for the loss on account of sale in domestic market but will also result in an overall profit of Rs. 2600.

Discontinuance of a product line

The following factors should be considered before taking a decision about the discontinuance of a product line:

- (i) The contribution given by the product. The contribution is different from profit. Profit is arrived at after deducting fixed cost from contribution. Fixed costs are apportioned over different products on some reasonable basis, which may not be very much correct. Hence contribution gives a

better idea about the profitability of a product as compared to profit.

- (ii) The capacity utilization, i.e., whether the firm is working to full capacity or below normal capacity. In case a firm is having idle capacity, the production of any product, which can contribute towards the recovery of fixed costs, can be justified.
- (iii) The availability of product to replace the product, which the firm wants to discontinue, and which is already accounting for a significant proportion of total capacity.
- (iv) The long-term prospects in the market for the product.
- (v) The effect on sale of other products. In some cases the discontinuance of one product may result in heavy decline in sales of other products affecting the overall profitability of the firm.

Illustration 16.10: A manufacturer is thinking whether he should drop one item from his product line and replace it with another. Below are given his present cost and output data:

Product	Price	Variable cost per unit	Percentage of sales
Book shelves	60	40	30%
Tables	100	60	20%
Beds	200	120	50%

Total fixed costs per year Rs. 750000
 Sales last year Rs. 2500000

The change under consideration consists in dropping the line of tables in favour of cabinets. If this dropping and change is made the manufacture forecasts the following cost and output data:

Product	Price	Variable cost per unit	Percentage of sales
Book shelves	60	40	50%
Tables	100	60	10%
Beds	200	120	40%

Total fixed costs per year Rs. 750000
 Sales last year Rs. 2600000

Solution: Comparative profit statement

		Existing situation				Proposed situation			
		Book-shelves	Table s	Beds	Total	Book-shelves	Table s	Beds	Total
		750000	500000	1250000	2500000	1300000	260000	1040000	2500000
Less	variable costs	500000	300000	750000	1550000	866667	97500	624000	1588166
		250000	200000	500000	950000	433333	162500	416000	1011833
Less:	Fixed Cost			7,50,000	7,50,000				
				<u>2,00,000</u>	<u>2,61,833</u>				

The above analysis shows that the manufacturer will stand to gain in case he drops the production of tables in preference to cabinets. However, the demand for cabinets should be of a permanent nature.

Working Notes

Existing situation: Computation of sales and variable costs

	Sales	Variable costs
Book-shelves	$25,00,000 \times \frac{36}{100}$ = Rs. 7,50,000	$7,50,000 \times \frac{40}{60}$ = Rs. 5,00,000
Tables	$25,00,000 \times \frac{20}{200}$ = Rs. 5,00,000	$5,00,000 \times \frac{60}{100}$ = Rs. 3,00,000
Beds	$25,00,000 \times \frac{50}{100}$ = Rs. 12,50,000	$12,50,000 \times \frac{120}{200}$ = Rs. 7,50,000

Proposed situation: Computation of sales and variable costs

	Sales	Variable costs
Book-shelves	$26,00,000 \times \frac{10}{100}$ = Rs. 13,00,000	$13,00,000 \times \frac{40}{60}$ = Rs. 8,66,667
Cabinets	$26,00,000 \times \frac{10}{100}$ = Rs. 2,60,000	$26,00,000 \times \frac{60}{160}$ = Rs. 97,500
Beds	$26,00,000 \times \frac{40}{100}$ = Rs. 10,40,000	$12,50,000 \times \frac{120}{200}$ = Rs. 6,24,000

Make or Buy Decision

A firm may be manufacturing a product by itself. It may receive an offer from an outside supplier to supply that product. Comparing the price that has to be paid will make the decision in such a case and the saving that can be effected on cost. The saving will be only terms of marginal cost of the product since generally no savings can be affected in fixed costs.

Similarly, a firm may be buying a product from outside, it may be considering to manufacture that product in the firm itself. Comparing the price being paid to outsiders and all additional costs that will have to be incurred for manufacturing the product will make the decision in such a case. Such additional costs will comprise not only direct materials and direct labour but also salaries of additional supervisors engaged, rent for premises if required and interest on additional capital employed. Besides that the firm must also take into account the fact that the firm will be losing the opportunity of using surplus capacity for any other purpose in case it decides to manufacture the product by itself.

In case a firm decides to get a product manufactured from outside, besides the savings in cost, it must also take into account the following factors:

- (i) Whether the outside supplier would be in a position to maintain quality of the product?
- (ii) Whether the supplier would be regular in his supplies?
- (iii) Whether the supplier is reliable? In other words, he is financially and technically sound.

In case the answer in “No” to any to these questions it will not be advisable for the firm to buy the product from outside.

Illustration 16.11 The Managing Director of A Pvt. Ltd., asks for our assistance in arriving at a decision as to whether to continue manufacturing a component ‘X’ or to buy it from an outside supplier. The

component 'X' is used in the finished products of the company. The following data are supplied:

1. The annual requirement of component 'X' is 10,000 units. The lowest quotation from an outside supplier is Rs.8.00 per unit.
2. The component 'X' is manufactured in the machine shop. If the component 'X' is bought out, certain machinery will be sold at its book value and the residual capacity of the machine shop will remain idle.
3. The total expenses of the Machine Shop for the year ending 31.3.2005 are as follows:

During that year the Machine shop manufactured 10,000 units of X': Material

	Rs.1,35,000
Direct Labour	1,00,000
Indirect Labour	40,000
Power and Fuel	6,000
Repairs and Maintenance	11,000
Rate, laxes and Insurance	16,000
Depreciation	20,000
Other Overhead Expenses	29,600

4. The following expenses of the Machine Shop apply to manufacturing of component 'X':

Material	Rs. 35,000
Direct labour	56,000
Indirect Labour	12,000

Power and Fuel	600
Repairs and Maintenance	1,000

The sale of machinery used for the manufacture of component 'X' would reduce:

Depreciation by Rs. 4000

And Insurance by Rs. 2000

5. If the component 'X' were bought out, the following additional expenses would be incurred:

Freight Rs. 1.00 per unit

Inspection Rs. 10,000 per annum.

You are required to prepare a report to the Managing Director showing the comparison of expenses of Machine Shop (I) when the component 'X' is made, and (II) when bought out.

Solution: Comparative statement of cost

	To make Component 'X' (Rs.)	To buy Component 'X' (Rs.)
Material	35,000	
Direct Labour	56,000	
Indirect Labour	12,000	

Power and Fuel	600	
Repairs and Maintenance	1,000	
Depreciation	4,000	
Insurance	2,000	
Total variable cost	1,10,600	
Variable cost per unit	11.06	
Purchase price per unit		8.00
Freight charge per unit		1.00
Inspection charge per unit		1.00
Cost per unit	11.06	10.00

It is preferable to buy component 'X' than to make it in the shop, because the variable cost per unit is less by Rs.1.06. Only variable cost is to be considered, since fixed costs would remain the same under both the circumstances. Even if the production of component 'X' is discontinued, fixed cost cannot be saved. Moreover, the capacity, which would remain idle on account of buying this component from the market, can be utilized for some other purpose in the near future.

Equipment Replacement Decision

While deciding about replacement of capital equipment, the firm should take into consideration the resultant savings in operating costs and the incremental investment in the new equipment. In case the savings is more than the cost of raising additional funds for the new equipment, the proposal may be accepted. Besides this the firm must take into account the benefits the firm is likely to derive in the long run by replacing old and obsolete equipment. The underpreciated book value of the old equipment should be taken as irrelevant cost for this

purpose. Many accountants disapprove replacement of obsolete equipment by a new one by pointing out 'loss on disposal of old assets'. Such a tendency is unfortunate since the past costs are sunk costs and they should not be allowed to affect adversely the future decisions and firm's goal of maximizing long-term profits.

The items of differential costs and benefits to be considered while deciding about the replacement of capital equipment call briefly be enumerated as follows:

Terms of differential costs

- (i) Capital equipment and associated costs, viz., interest, depreciation, etc.
- (ii) Loss on sale of old equipment.
- (iii) Increase in fixed overhead costs.

Items of differential benefits

- (i) Saving in operating costs.
- (ii) Increased volume and value of production.
- (iii) Realizable value of old machine.
- (iv) Tax benefits, if any.

Illustration 16.12: A company purchased a machine two years ago at a cost of Rs.60,000. The equipment has no salvage value at the end of its six years useful life and the company is charging depreciation according to straight line method. The company learns that new equipment can be purchased at a cost of Rs. 80,000 to do the same job and having an expected economic life of 4 years without any salvage value. The advantage of the new machine lies in its greater operating

efficiency, which will reduce the variable operating expenses from the present level of Rs. 1,65,000 to Rs. 1,30,000 per annum. The sales volume is expected to continue at Rs. 2 lacs per annum for the next four years.

You are required to evaluate the usefulness of the proposals.

Solution: A natural tendency on the part of most of the accountants and the managers is to reject the proposal on the ground that the present machine is functioning well and is expected to render useful service for another four years. Its scrapping at the present time would result in a loss of Rs.40,000- the underpreciated book value.

This is not really the correct approach. The book value of the old machine is irrelevant while taking the decision for its replacement. It represents a cost incurred as a result of the decision made two years ago. The depreciation expenses merely reflect apportionment of that past cost over the fiscal periods, whose income benefits from the use of the asset. The book value of the old asset should, therefore, be eliminated as a factor while deciding whether to buy or not to buy the machine. Moreover, from the accounting point of view an immediate write-off of Rs. 40,000 or as depreciation of Rs. 10,000 per annum for four years, results in no difference in total cost and product's profits for the next 4 years when taken as a whole. The following table analyses the profitability or otherwise of the new machine.

**STATEMENT SHOWING THE PROFITABILITY OF THE PRESENT
AND THE NEW MACHINE OVER A PERIOD OF 4 YEARS**

		Present Machine (Rs.)	New Machine (Rs.)	Increase (Decrease) in costs (Rs.)
1.	Sales	8,00,000	8,00,000	
2.	Variable cost	6,60,000	5,20,000	(1,40,000)
3.	Loss on account of writing off the old machine	40,000	40,000	
4.	Depreciation of new machine		80,000	80,000
	Total costs	7,00,000	6,40,000	60,000
	Net Profits	1,00,000	1,60,000	60,000
	Average annual incremental income			Rs. 15,000
	Incremental investment			Rs. 80,000
	Return on incremental investment			Rs. 18.75%

The above data is an indicator of the fact that there will be 18.75% return on additional investment of Rs. 80,000/-. The return seems to be quite reasonable and, therefore, it will be appropriate for the company to go in for the replacement of the present machine by a new machine.

16.11 SUMMARY

Marginal costing which is otherwise known as variable costing is used as a tool for decision-making by the management. Marginal costing is also known as direct costing and this new concept is gaining wide popularity in the field of accounting. Marginal costing is a technique through which variable costs are taken into account for the purpose of product costing, inventory valuation and other important

management decisions. The fixed cost, variable costs, contribution, key factor, profit volume ratio and break-even analysis are quite important concepts in marginal costing.

Break-even analysis is one of the important tools in marginal costing with the help of which we calculate the operating profits at a given sales volume, sales volume at a desired level of profit, effects of fixed cost and variable costs for the purpose of financial analysis of a company/organization.

In decision-making analysis, we may make various types of decisions with the help of marginal costing. These decisions mainly include -Determination of sales mix; Exploring new markets, Discontinuance of a production line, Make or buy decisions, Equipment replacement decision, Investment in asset, Change versus status quo and Expand or contract. Such a large number of decisions reveal the vital significance of marginal costing with reference to break-even analysis and decision-making alternative choices.

16.12 KEYWORDS

Marginal Cost: The cost incurred in producing an additional unit of product is known as marginal cost.

Marginal costing: It is a technique of ascertaining cost of production of goods or services manufactured.

Semi-variable cost: It is defined as a cost containing both fixed and variable elements.

Break-even point: The point, which breaks the total cost and the selling price evenly to show the level of output or sales at which there shall be neither profit nor loss, is regarded as break-even point.

Differential cost: Differential cost means difference in cost between alternatives.

16.13 SELF ASSESSMENT QUESTIONS

1. Discuss the importance of marginal costing for managerial decision-making. State briefly the difference between contribution and profit volume ratio.
2. “Marginal costing is the presentation of accounting information in such a way as to assist the management in the creation of policy and in day to day operation of the undertaking”. Elucidate.
3. Explain the tools of marginal costing. Discuss the methods of segregating the fixed and variable costs.
4. How does marginal costing help in decision-making? Discuss the different kind of decisions made through marginal costing. Give suitable examples.
5. Write short notes on the following:
 - a) Break-even analysis
 - b) Key factor.
 - c) Differential costing.
6. By taking some imaginary figures, calculate contribution, key factor, profit volume ratio, break-even point and margin of safety.
7. Illustrate how decisions are made with help of marginal costing. Take suitable examples. Give working notes.

16.14 SUGGESTED READINGS

1. S.N. Mittal, Management and Financial Accounting.
2. Ravi M. Kishore, Advanced Management Accounting.
3. I.M. Pandey, Management Accounting.
4. S.N. Maheshwari, Management Accounting and Financial Control.
5. Vinayakam, Principles of Management Accounting.

Subject : Accounting for Managers

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Lesson : 17

RECONCILIATION OF COST AND FINANCIAL ACCOUNTS

STRUCTURE

- 17.0 Objective
- 17.1 Introduction
- 17.2 Reasons for Disagreement in Profits
- 17.3 Effect of Various Items of Profit
- 17.4 Reconciliation Procedure
- 17.5 Summary
- 17.6 Keywords
- 17.7 Self Assessment Questions
- 17.8 Suggested Readings

17.0 OBJECTIVE

After reading this lesson, you should be able to

- (a) Identify the reasons for difference in profit/loss between cost and financial accounts.
- (b) Explain the procedure for reconciliation of cost and financial accounts.

17.1 INTRODUCTION

When cost accounts and financial accounts are maintained in two different sets of books, there will be prepared two Profit and Loss Accounts - one for costing books and the other for financial books. The profit or loss shown by costing books may not agree with that shown by financial books. Such a system is termed as 'Non-Integral System' whereas under the integral system of accounting, there are no separate cost and financial accounts. Consequently, the problem of reconciliation does not arise under the integral system. However, where two sets of accounting systems, namely, financial

accounting and cost accounting are being maintained, the profit shown by the two sets of accounts may not agree with each other. Although both deal with the same basic transactions like purchases, consumption of materials, wages and other expenses, the difference of purpose leads to a difference in approach in a collection, analysis and presentation of data to meet the objective of the individual system. Financial accounts are concerned with the ascertainment of profit or loss for the whole operation of the organisation for a relatively long period, usually a year, without being too much concerned with cost computation, whereas cost accounts are concerned with the ascertainment of profit or loss made by manufacturing divisions or products for cost comparison and preparation and use of a variety of cost statements. The difference in purpose and approach in cost accounting generally results in a different profit figure from what is disclosed by the financial accounts and thus arises the need for the reconciliation of profit figures given by the cost accounts and financial accounts. The reconciliation of the profit figures of the two sets of books is necessary due to the following reasons :

1. It helps to identify the reasons for the difference in the profit or loss shown by cost and financial accounts.
2. It ensures the arithmetical accuracy and reliability of cost accounts.
3. It contributes to the standardisation of policies regarding stock valuation, depreciation and overheads.
4. Reconciliation helps the management in exercising a more effective internal control.

17.2 REASONS FOR DISAGREEMENT IN PROFITS

Difference in profit or loss between cost and financial accounts may arise due to following reasons :

1. **Items shown only in financial accounts**

There are a number of items which are included in financial accounts but find no place in cost accounts. These may be items of expenditure or appropriation of profit or items of income. The former reduces the profit while the latter have the reverse effect. The items may be classified as under :

- (a) **Pure financial charges :** (i) Loss arising from the sale of fixed assets, (ii) Loss on investments, (iii) Discount on debentures, (iv) Interest on bank loan, mortgages and debentures, (v) Expenses of the company's share transfer office.
- (b) **Appropriation of Profit :** (i) Donations and Charities, (ii) Income-tax, (iii) Dividend paid, (iv) Transfers to reserves and sinking funds.
- (c) **Purely financial incomes :** (i) Rent receivable, (ii) Profits on the sale of fixed assets, (iii) Transfer fees received, (iv) Interest received on bank deposits, (v) Dividend received.
- (d) **Writing off intangible and fictitious assets :** (i) Goodwill, Patents and copyrights, (ii) Advertisement, preliminary expenses, organisation expenses, etc.

2. **Items shown only in cost accounts**

There are certain items which are included in cost accounts but not in financial accounts.

- (i) Charge in lieu of rent where premises are owned.
- (ii) Depreciation on an asset even when the book value of the asset is reduced to a negligible figure.
- (iii) Interest on capital employed in production but upon which no interest is actually paid (this will be the case when the firm decides to include interest in the overheads).

The above items will reduce the profits in Cost Accounts as compared to that in Financial Accounts.

3. **Estimates and actuals**

Since cost accounts are meant to function as a control device it will be appropriate to adopt estimated costing or preferably standard costing system while preparing cost accounts. Estimates or standards can be nearer to the actuals but in most cases they cannot be the same. This necessarily means that the profit shown by the cost accounts is bound to be different from the profit shown by the financial accounts.

Following are some of the important items the costs of which may be different in financial books and costing books :

- (a) **Direct materials** : The estimated or standard cost of the direct materials purchased or consumed in the production process may be different from the actual costs. This difference will be due to change in price or quantity or both.
- (b) **Direct Labour** : The estimated or standard cost of direct labour may be different from the actual costs because of difference in wage rates or hours of work or both. Sometimes, workers might have to be paid more due to increased dearness allowance, pay revisions, bonus etc. This will cause difference between the profits shown by the two sets of books.
- (c) **Overheads** : In cost accounts the recovery of overheads is generally based on estimates while in financial accounts the actual expenses incurred are recorded. This results in under or over-recovery of overheads.

The under-recovery or over-recovery of overheads may be carried forward to the next period or may be charged by a supplementary rate (positive or negative) or transferred to Costing Profit and Loss Account. In case the under-recovery or over-recovery of overheads has been carried forward to the

next period, the profit as shown by the costing books will be different from the profit as shown by the financial books. Such variation may be due to over or under charging of factory, office or selling and distribution overheads.

(d) **Depreciation** : Different methods of charging depreciation may be adopted in cost and financial books. In financial books, depreciation may be charged according to fixed instalment method or diminishing balance method etc. while in cost accounts machine hour rate or any other method may be used. This is also an item of overheads and may be one of the reasons of difference between the overheads charged in financial accounts and overheads charged in cost accounts.

4. Valuation of stocks

(a) **Raw materials** : In financial accounts stock of raw materials is valued at cost or market price, whichever is less, while in cost accounts stock can be valued on the basis of FIFO or LIFO or any other method . Thus, the figure of stock may be inflated in cost or financial accounts.

(b) **Work-in-progress** : Difference may also exist regarding mode of valuation of work-in-progress. It may be valued at prime cost or factory cost or cost of production. The most appropriate mode of valuing is at factory cost in cost accounts. In financial accounts, work-in-progress may be valued after considering a part of administrative expenses also.

(c) **Finished goods** : Under financial accounts, stock of finished goods is valued at cost or market price whichever is lower. In cost accounts, finished stock is generally valued at total cost of production. If the circumstances warrant, prime cost or factory cost may also be taken as the basis for valuing the stock of finished goods.

Thus, mode of valuation of stocks gives rise to different results

in the two sets of books. Greater valuation of opening stocks in cost accounts means less profit as per cost accounts and vice versa. Greater valuation of closing stocks in cost accounts means more profit as per cost accounts and vice versa.

5. Abnormal gains and losses

Abnormal gains or losses may completely be excluded from cost accounts or may be taken to Costing Profit and Loss Account. In financial accounts such gains and losses are taken to Profit and Loss Account. As such, in the former case costing profit/loss will differ from financial profit/loss and adjustment will be required. In the latter case, there will be no difference on this account between costing profit or loss and financial profit or loss. Therefore, no adjustment will be required on this account. Examples of such abnormal gains and losses are abnormal wastage of materials e.g. by theft or fire etc., cost of abnormal idle time, cost of abnormal idle facilities, exceptional bad debts, abnormal gain in manufacturing through processes (when actual production exceeds normal production).

17.3 EFFECT OF VARIOUS ITEMS ON PROFIT

Now, let's examine the effect of various items, discussed above on the profit figures revealed by cost accounts and financial accounts.

Causes of Differences	Effect on Profit as per Cost Accounts	Effect on Profit as per Financial Accounts
1. Expenses/Losses included in financial accounts only	More	Less
2. Pure Financial Charges	More	Less
3. Incomes and gains credited in financial accounts only	Less	More

4. Items shown in Cost accounts only	Less	More
5. Under-recovery of overheads in cost accounts	More	Less
6. Over-recovery of overheads in cost accounts	Less	More
7. <i>Stock Valuation</i> :		
Higher value of op. stock and/or lower value of closing stock in cost books when compared to financial books	Less	More
Lower value of op. stock and/or higher value of closing stock in cost books when compared to financial books	More	Less
8. <i>Depreciation Methods</i> :		
Excess depreciation in cost books when compared to financial books	Less	More
Excess depreciation in financial books	More	Less

17.4 RECONCILIATION PROCEDURE

Reconciliation of cost and financial accounts is done on the principle of bank reconciliation statement. One may begin with profit as per the financial books or cost books and thereafter items causing differences in profit may be added or deducted depending on the circumstances. After all such items have been considered, profit as per other books may be arrived at.

This reconciliation may be achieved through a mere statement (Reconciliation Statement) or preparing a Memorandum Reconciliation Account. Both these approaches are discussed below :

(a) Preparation of Reconciliation Statement

When there is a difference between the profits disclosed by cost accounts and financial accounts, the following steps shall be taken to prepare a Reconciliation Statement :

- 1 Ascertain the various reasons of disagreement (as discussed above) between the profits disclosed by two sets of books of accounts.
- 2 If profit as per cost accounts (or loss as per financial accounts) is taken as the base :

ADD :

- (i) Items of income included in financial accounts but not in cost accounts.
- (ii) Items of expenditure (as interest on capital, rent on owned premises, etc.) included in cost accounts but not in financial accounts.
- (iii) Amounts by which items of expenditure have been shown in excess in cost accounts as compared to the corresponding entries in financial accounts.
- (iv) Amounts by which items of income have been shown in excess in financial accounts as compared to the corresponding entries in cost accounts.
- (v) Over-absorption of overheads in cost accounts.
- (vi) The amount by which closing stock of inventory is under-valued in cost accounts.
- (vii) The amount by which the opening stock of inventory is over-valued in cost accounts.

DEDUCT :

- (i) Items of income included in cost accounts but not in financial accounts.

- (ii) Items of expenditure included in financial accounts but not in cost accounts.
- (iii) Amounts by which item of income have been shown in excess in cost accounts over the corresponding entries in financial accounts.
- (iv) Amounts by which items of expenditure have been shown in excess in financial accounts over the corresponding entries in cost accounts.
- (v) Under absorption of overheads in cost accounts.
- (vi) The amount by which closing stock of inventory is over-valued in cost accounts.
- (vii) The amount by which the opening stock of inventory is under-valued in cost accounts.

3. After making all the above additions and deductions, the resulting figure will be profit as per financial accounts.

Note : If profit as per financial accounts (or loss as per cost accounts) is taken as the base, then items added shall be deducted and items to be deducted shall be added, i.e., the procedure shall be reversed.

Illustration 1 :

	Rs.
Profit as per Cost Accounts	10,000
Works overheads under-recovered in cost accounts	500
Interest on capital included in financial accounts	500
Dividends received	1,000
Rent for owned building charged in cost accounts	300
Profit as per financial books	10,300

There is a difference of Rs. 300 between the profit as shown by the financial books and the profit as shown by the cost books. A reconciliation statement can be prepared to reconcile, on the following basis, the profits shown by two sets of books :

- (i) Profit as per cost accounts may be taken as the base. In other words, the profit as shown by the financial books can be found out if suitable adjustments are made in this figure of profit and after taking it account the above causes of difference.
- (ii) Works overheads have been charged more in financial accounts than those in cost accounts. This means profit as shown by the financial accounts is less than the profit as shown by the cost accounts by Rs. 500 (the amount of under-recovery). Since profit as per cost accounts has been taken as the base, the amount of Rs. 500 should be subtracted from this base profit to arrive at the profit as shown by the financial accounts.
- (iii) The inclusion of interest on capital as an expense has resulted in decrease in profits as shown by financial books. In other words, the profit as shown by the cost books is more than the profit as shown by the financial books by Rs. 500 (the amount of interest). The amount should, therefore, be subtracted from the base profit.
- (iv) Dividend received has been credited in financial books. This means the profit as shown by the financial books is more than the profit as shown by the cost books by Rs. 1,000. The amount should, therefore, be added to the profit as shown by the cost books.
- (v) No charge is made in financial books for rent on owned buildings. The amount has however been charged in the cost books. It means the profit as shown by the financial books is higher than the profit as shown by the cost books by this amount. The amount, therefore, should be added to the profit.

The reconciliation statement may now be conveniently presented in the following form :

Reconciliation Statement

Particulars	+	–
	Rs.	Rs.
Profit as per Cost Accounts	10,000	
<i>Less</i> : Works overheads under charged in cost accounts		500
Interest on Capital included in financial accounts		500
<i>Add</i> : Dividends received	1,000	
Rent on owned buildings	300	
	11,300	1,000
Profit as per Financial Accounts	10,300	

In case, in the above example, the cost accounts show a loss of Rs. 10,000, in place of a profit, the amount of loss should be put in the 'minus' column. The reconciliation statement should then be prepared on the same pattern as if there is a profit in place of there being a loss.

Illustration 2: From the information given below prepare (i) a statement showing costing profit or loss : and (ii) another statement reconciling the costing profits with those shown by financial accounts :

Trading and Profit and Loss Account for the year ended 31 Dec. 2001

	Rs.		Rs.
To Materials consumed	1,00,000	By Sales (1,00,000 units)	2,00,000
To Direct wages	50,000		
To Indirect factory expenses	30,000		
To Office expenses	9,000		
To Selling & dist. expenses	6,000		
To Net profit	5,000		
	2,00,000		2,00,000

The normal output of the factory is 1,50,000 units. Factory expenses of a fixed nature are Rs. 18,000. Office expenses are for all practical purposes constant. Selling and distribution expenses are constant to the extent of Rs. 3,000 and the balance varies with sales.

Solution :

(i) Statement of Cost and Profit

(as per cost Accounts)

Normal Production 1,50,000 units/Actual Production 1,00,000 units

		Rs.
Material consumed		1,00,000
Direct wages		50,000
	Prime Cost	1,50,000
Works overheads (1)		
Fixed	Rs. 12,000	
Variable	Rs. 12,000	24,000
	Works Cost	1,74,000
Office overheads (2)		6,000
	Cost of Production	1,80,000
Selling and distribution Overheads (3)		
Fixed	Rs. 2,000	
Variable	Rs. 3,000	5,000
	Cost of Sales	1,85,000
	Profit	15,000
	Sales	2,00,000

(ii) Reconciliation Statement

	Rs.	Rs.
Profits as per Cost Accounts		15,000
<i>Less :</i> Under-recovery of works overheads in Cost Accounts	6,000	
Under-recovery of office expenses in Cost Accounts	3,000	
Under-recovery of Selling and distribution expenses in cost Accounts	1,000	10,000
Profit as per Financial Accounts		5,000

Working Notes :

(1) **Factory Overhead :** Total factory overhead are Rs. 30,000 comprising of Rs. 18,000 fixed and Rs. 12,000 variable overhead. The normal output of the factory is 1,50,000 units whereas actual output is 1,00,000 units. Thus the fixed overhead will be proportionately charged for actual output which is computed as follows :

$$\frac{1,00,000}{1,50,000} \times 18,000 = \text{Rs. } 12,000 \text{ Fixed Overhead}$$

Variable overheads of Rs. 12,000 are for actual output and thus will be charged as such.

(2) **Office overhead :** These are completely fixed charges and thus will be proportionally charged for actual output. It is computed as follows :

$$\frac{1,00,000}{1,50,000} \times 9,000 = \text{Rs. } 6,000$$

(3) **Selling and Distribution Overhead :** Fixed portion of these will be proportionally charged. It is computed as follows :

$$\frac{1,00,000}{1,50,000} \times 3,000 = \text{Rs. } 2,000$$

(b) Preparation of Memorandum Reconciliation Account

This reconciliation procedure is in the form of account. The debit side (Dr.) of the Memorandum Reconciliation Account shows items to be deducted from the profit as per any set of books taken as a starting point. The credit side of the this account shows profit figure accepted as a starting point as well as items to be added to this profit figure. The difference between the credit side and debit side will give profit as per the other set of books. A proforma of Memorandum Reconciliation Account is shown as follows:

Memorandum Reconciliation Account

Dr.		Cr.
To Financial Expenses	Rs.	By Profit as per Cost Accounts
Discount		By Financial Income
Bank interest		Rent
Donations		Interest
Underwriter's commission		Transfer fees
Fine & penalties		Profit on sale of investments
Loss on sale of assets		
Goodwill written off		By items charged in Cost Accounts
To under-absorption of overheads		Rent of own Building
To under-valuation of opening		Interest on Capital
Stock in Cost Accounts		By over-absorption of overheads
To Over-valuation of closing		By over-valuation of opening
Stock in Cost Accounts		Stock in Cost Accounts
To Profit as per Financial		By under valuation of closing
Accounts		Stock Cost Accounts

Illustration 3 : The following is a summary of the Trading and Profit and Loss Account of Messers Nikhil Manufacturing Co. Ltd., for the year ended 31st December, 2001;

Dr.		Cr.
	Rs.	
To Materials Consumed	27,40,000	By Sales
To wages	15,10,000	(1,20,000 units) 60,00,000
To Factory Expenses	8,30,000	By Finished stock
To Administration Expenses	3,82,400	(4,000 units) 1,60,000
To Selling and Distribution		By Work-in-progress :
To Expenses	4,50,000	Materials 64,000
To Preliminary Expenses		Wages 36,000
(Written off)	40,000	Factory
To Goodwill (written off)	20,000	Expenses <u>20,000</u> 1,20,000
To Net Profit	3,25,600	By Dividends Received 18,000
	<u>62,98,000</u>	<u>62,98,000</u>

The company manufactures a standard unit. In the Cost Accounts :

- (i) Factory expenses have been recovered from production at 20 per cent on prime cost ;
- (ii) Administration expenses at Rs. 3 per unit on units produced ;
- (iii) Selling and distribution expenses at Rs. 4 per unit on units sold.

You are required to prepare a statement of cost and profit in cost books of the company and to reconcile the profit disclosed with that shown in the Financial Accounts.

Solution :

	Rs.	Rs.
Materials	27,40,000	
Labour	15,10,000	
Prime Cost	<u>42,50,000</u>	
Factory Expenses applied (20% of Prime Cost)	<u>8,50,000</u>	51,00,000
<i>Less :</i> Closing work-in-progress		<u>1,20,000</u>
Works Cost		49,80,000
<i>Add :</i> Administration Expenses (1,20,000+4,000)×Rs.3		<u>3,72,000</u>
Cost of Production		53,52,000
<i>Less :</i> Cost of Closing Finished Stock		
($\frac{4,000}{1,24,000}$ units (i.e., 1/3) of Rs. 53,52,000)		<u>1,72,645</u>
Cost of Goods sold		51,79,355
<i>Add :</i> Selling & Distribution Expenses (1,20,000×Rs.4)		4,80,000
		<u>56,59,355</u>
Profit as per Cost Accounts		3,40,645
Sales (1,20,000×50)		<u>60,00,000</u>

Reconciliation Statement

	Rs.	Rs.
Profit as per costing books		3,40,645
<i>Add :</i> Over-recovery of selling expenses (Rs. 4,80,000-4,50,000)	30,000	
Over-recovery of factory expenses (Rs. 8,50,000-8,30,000)	20,000	
Dividend received	18,000	<u>68,000</u>
<i>Less :</i> Under-recovery of Administration Expenses (Rs. 3,82,400-3,72,000)	10,400	4,08,645
Preliminary expenses written off	40,000	
Goodwill written off	20,000	
Difference in valuation of finished stock	12,645	83,045
Profit as per Financial Accounts		<u><u>3,25,600</u></u>

Illustration 4 : The following figures are extracted from the financial accounts of a manufacturing firm for the first year of its operation :

	Rs.
Direct material consumption	50,00,000
Direct wages	30,00,000
Factory overheads	16,00,000
Administration overheads	7,00,000
Selling and Distribution overheads	9,60,000
Bad debts	80,000
Preliminary expenses written off	40,000
Legal Charges	10,000
Dividends received	1,00,000
Interest on Deposit received	20,000
Sales - 1,20,000 units	1,20,000
Closing stock :	
Finished stock 4,000 units	3,20,000
Work-in-progress	2,40,000

The cost accounts for the same period reveal that the direct material consumption was Rs. 56,00,000; Factory overhead is recovered at 20% on Prime Cost; Administration overhead is recovered @ Rs. 6 per unit of production; Selling and Distribution overheads are recovered @ Rs. 8 per unit sold.

You are required to prepare Costing and Financial Profit and Loss Accounts and reconcile the difference in the profits as arrived at in the two sets of accounts

Solution :

Costing Profit and Loss Account

Direct Materials	56,00,000
Direct Wages	30,00,000
Prime cost	86,00,000
Factory overhead 20% on Prime cost	17,20,000
	1,03,20,000
<i>Less Work-in-progress (Closing stock)</i>	<i>2,40,000</i>
Works Cost	1,00,80,000
Administration overhead Rs. 6 per unit of production : 1,20,000 + 4,000	7,44,000
Cost of Production	1,08,24,000
<i>Less Closing stock</i> $\frac{1,08,24,000}{1,24,000} \times 4,000$	<i>3,49,161</i>
	1,04,74,839
<i>Add Selling and distribution expenses @ Rs. 8 per unit i.e. 1,20,000×8</i>	<i>9,60,000</i>
Cost of Goods sold	1,14,34,839
Profit	5,65,161
Sales	1,20,00,000

Financial Profit and Loss Account

	Rs.		Rs.
To Direct Materials	50,00,000	By Sales	1,20,00,000
To Direct Wages	30,00,000	By Closing stock :	
To Factory Overheads	16,00,000	Finished Stock	3,20,000
To Gross Profit	29,60,000	WIP	2,40,000
	1,25,60,000		1,25,60,000
To Administration		By Gross Profit	29,60,000
Overheads	7,00,000	By Dividends	1,00,000
To Selling and Distribution	9,60,000	By Interest	20,000
To Bad debts	80,000		
To Preliminary Expenses	40,000		
To Legal Charges	10,000		
To Net Profit	12,90,000		
	30,80,000		30,80,000

Reconciliation Statement

	Rs.	Rs.
Profit as per cost accounts		5,65,161
<i>Add :</i> Dividend not taken in costing	1,00,000	
Interest not taken in costing	20,000	
Excess of Direct materials consumed	6,00,000	
Over-absorbed in Costing :		
(a) Factory overheads	1,20,000	
(b) Administration overheads	44,000	8,84,000
		14,49,161
<i>Less :</i> Bad Debts taken in Financial		
Accounts but not in costing	80,000	
Preliminary expenses taken in Financial		
Accounting, but not in costing	40,000	
Legal charges taken in financial but not in costing	10,000	
Different in closing stock		
(3,49,161-3,20,000)	29,161	1,59,161
Profit as per Financial Accounts		12,90,000

Illustration 5 :

The Manufacturing, Trading, Profit and Loss and Profit and Loss Appropriation Account of Jyoti Ltd. for the year ending December 31 are as follows :

Particulars		Rs.	Particulars		Rs.
To Raw Materials :			By Trading Account		
Opening Stock	27,458		Cost of goods manufactured		
Purchases	1,34,762		transferred		3,18,466
	<u>1,62,220</u>				
<i>Less</i> : Closing Stock	29,326	1,32,894			
To Wages - direct		1,12,378			
Prime Cost		<u>2,45,272</u>			
Production overhead :					
Power	23,246				
Wages - Indirect	31,351				
Rent and rates	10,724				
Heating and lighting	2,841				
Depreciation	6,015				
Expenses	<u>1,020</u>	75,197			
Gross Works Cost		<u>3,20,469</u>			
Deduct Works-in-Progress :					
Closing Stock	21,382				
<i>Less</i> Opening stock	<u>19,379</u>	2,003			
		<u>3,18,466</u>			<u>3,18,466</u>
To Finished goods			By Sales		5,00,000
Opening Stock	20,642				
Goods manufactured	<u>3,18,466</u>				
	3,39,108				
<i>Less</i> : Closing Stock	<u>22,435</u>	3,16,673			
To Gross Profit c/d		1,83,327			
		<u>5,00,000</u>			<u>5,00,000</u>

To Office salaries	35,642	By Gross profit b/d	1,83,327
To Office expenses	20,326	By Dividend received	300
To Salesmen's salaries	18,421	By Interest on bank deposit	50
To Selling expenses	15,263		
To Distribution expenses	13,248		
To Loss on sale of plant	1,250		
To Fines	200		
To Interest on mortgage	150		
To Net profit for the year	79,177		
	<u>1,83,677</u>		<u>1,83,677</u>
To Taxation	25,000	By Balance b/d	35,246
To General Reserve	10,000	By Net Profit for the year	79,177
To Equity Share dividend	20,000		
To Preference share dividend	10,000		
To Goodwill written off	4,000		
To Balance c/d	45,423		
	<u>1,14,423</u>		<u>1,14,423</u>

The cost accounts revealed a profit of Rs. 1,27,411. In preparing this figure, stocks had been valued as follows :

Raw materials	:	Opening stock Rs. 27,342
		Closing stock Rs. 29,457
Work-in-Progress	:	Opening stock Rs. 19,488
		Closing stock Rs. 21,296

Selling and distribution expenses had been ignored in the cost accounts. Prepare a Reconciliation Account.

Solution :**Memorandum Reconciliation Account**

Particulars		Rs.	Particulars	Rs.	
Items not charged in cost accounts :			Profits as per cost accounts	1,27,411	
	Rs.	Rs.	Items not credited in cost accounts :		
Loss on sale of Plant	1,250			Rs.	
Fines	200		Dividend received	300	
Interest	<u>150</u>	1,600	Interest	<u>50</u>	350
Salesmen's salaries	18,421		Difference in stocks :		
Selling expenses	15,263		Work-in-Progress		
Distribution expenses	<u>13,248</u>	46,932	Opening	109	
Difference in stocks :			Closing	<u>86</u>	195
Raw materials					
Opening		116			
Closing		<u>131</u>			
Profit as per financial accounts		79,177			
		<u>1,27,956</u>		<u>1,27,956</u>	

Reconciliation Statement

Particulars	Rs.	Rs.
Profit as per Cost Accounts		1,27,411
<i>Less :</i> Items not charged in cost accounts :		
Loss on sale of plant	1,250	
Fines	200	
Interest	150	1,600
		<u>1,25,811</u>
<i>Add:</i> Items not credited in cost accounts :		
Dividend received	300	
Interest	50	350
		<u>1,26,161</u>
<i>Less :</i> Selling and distribution expenses :		
Salesmen's salaries	18,421	
Selling expenses	15,263	
Distribution expenses	13,248	46,932
		<u>79,229</u>

<i>Add:</i> Difference in stocks :		
Work-in-Progress – Opening	109	
Closing	86	195
		79,424
<i>Less :</i> Difference in stocks :		
Raw materials – Opening	116	
Closing	131	247
Profit as per Financial Accounts		79,177

17.5 SUMMARY

In case of Non-Integral system, separate books of accounts are maintained for costing and financial transaction. Normally under this system profit shown by the two sets of the books will be different. However, it is possible per chance, that the overall profit shown by the two sets of the books is the same. Nonetheless in such a case also the items and/or amounts incorporated will be different. Hence, the results shown by two sets of books are always required to be reconciled to identify the causes of difference and to establish the accuracy of both sets of books. A reconciliation statement is prepared simply to identify such causes. In case such reconciliation brings out certain errors or discrepancies, they have to be separately rectified. However, it is necessary that the classification of income and expenses both for financial and cost accounts is on the same basis so that it is possible to compile them on the same lines in both cases.

17.6 KEYWORDS

Non-integral system: When separate books of accounts are maintained for costing and financial transaction, it is known as non-integral system.

Reconciliation statement: It is a statement prepared to know the reasons for differences in financial and cost accounts.

17.7 SELF ASSESSMENT QUESTIONS

1. "Reconciliation of Cost and Financial Accounts in the modern computer age is relevant". Comment.
2. Why is it necessary to reconcile the profit shown by Cost Accounts and Financial Accounts ? What is the procedure to be adopted for their reconciliation ?
3. What is the purpose of reconciling Cost and Financial Accounts ? Indicate the possible reasons for differences between profit shown in the Cost Accounts and that shown in the Financial Accounts of a concern.
4. "An efficient system of costing will not necessarily produce accounts which in their results will agree with the financial accounts". Comment upon the statement.
5. At the end of an accounting period, it is found that the profit as shown by the Financial Accounts falls considerably short of the profit according to the Cost Accounts. Indicate how the discrepancy might have arisen.
6. From the following data prepare a reconciliation statement :

	Rs.
Profit as per cost accounts	1,45,500
Works overheads under-recovered	9,500
Administrative overheads under-recovered	22,750
Selling overheads over-recovered	19,500
Overvaluation of opening stock in cost accounts	15,000
Overvaluation of closing stock in cost accounts	7,500

Interest earned during the year	3,750
Rent received during the year	27,000
Bad debts written off during the year	9,000
Preliminary expenses written of during the year	18,000

7. The financial profit and loss account of Pal Manufacturing Company for the year ended 31st March 1999 is as follows :

Particulars	Rs.	Particulars	Rs.
To Materials Consumed	50,000	By Sales	1,24,000
To Carriage inwards	1,000		
To Direct Wages	34,000		
To Works expenses	12,000		
To Administration expenses	4,500		
To Selling and distribution expenses	6,500		
To Debenture Interest	1,000		
To Net Profit	15,000		
	<u>1,24,000</u>		<u>1,24,000</u>

The net profit shown by the Cost accounts for the year is Rs. 16,270. Upon a detailed comparison of the two sets of accounts it is found that :

- (a) the amounts charged in the cost accounts in respect of overhead charges are as follows :

	Rs.
Works overhead charges	11,500
Office overhead charges	4,590
Selling and distribution expenses	6,640

- (b) No Charge has been made in the cost accounts in respect of debenture interest.

You are required to reconcile the profits shown by the two sets of accounts.

8. During a particular year, the auditors certified the financial accounts, showing a profit of Rs. 1,68,000, whereas the same as per costing books was coming out to be Rs. 2,40,000. Given the following information you are asked to prepare a reconciliation statement showing clearly the reasons for the gap :

Dr.		Trading and Profit and Loss A/c		Cr.	
Particulars	Rs.	Particulars	Rs.		
To Opening Stock	8,20,000	By Sales	34,65,000		
To Purchase	24,72,000	By Closing Stock	7,50,000		
To Direct Wages	2,30,000				
To Factory Overheads	2,10,000				
To Gross Profit c/d	4,83,000				
	42,15,000			42,15,000	
To Administration Exp.	95,000	By Gross Profit	4,83,000		
To Selling Expenses	2,25,000	By Sundry Income	5,000		
To Net Profit	1,68,000				
	4,88,000			4,88,000	

The costing records show :

- (a) Book value of costing stock Rs. 7,80,000.
- (b) Factory overheads have been absorbed to the extent of Rs. 1,89,800
- (c) Sundry Income is not considered.
- (d) Administrative Expenses are recovered at 3% of selling price.

- (e) Total absorption of direct wages Rs. 2,46,000.
 - (f) Selling prices include 5% for selling expenses.
9. Prepare a Memorandum Reconciliation Account from the following particulars :

Profit shown by cost books Rs. 30,114 and by financial books Rs. 19,760. On reconciling the following information is available :

- 1) Overhead absorbed in cost books Rs. 7,500 and incurred Rs. 6,932
- 2) Director's fees not included in cost books Rs. 750.
- 3) Provision for bad debts Rs. 600.
- 4) A new work was taken for Rs. 12,000 and depreciation of 5% was provided for only in the financial books.
- 5) Transfer fees Rs. 28.
- 6) Income tax Rs. 9,000

17.8 SUGGESTED READINGS

- 1. Cost Accounting by Jawahar Lal
- 2. Cost Accounting by Ravi M. Kishore
- 3. Cost Accounting by V.S.P. Rao

Subject : Accounting for Managers

Code : CP-104

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Lesson : 18

OVERHEADS

STRUCTURE

- 18.0 Objective
- 18.1 Introduction
- 18.2 Classifications of Overhead Costs
- 18.3 Allocation and Apportionment of Factory Overheads
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18.0 OBJECTIVE

After reading this lesson, you should be able to

- (a) Make a classification of overhead costs.
- (b) Explain the basis for allocation and apportionment of overheads.
- (c) Discuss the methods of absorption of overheads.
- (d) Explain the treatment of special items of overheads in cost accounts.

18.1 INTRODUCTION

Overheads are the indirect costs which cannot be allocated to any specific job or process because they are not capable of being identified with any specific job or process. Overheads include cost of indirect material, indirect labour, indirect expenses which cannot be conveniently charged to any job, process, cost unit etc. For example, costs like rent, rates, administration and supervision, depreciation, maintenance, selling and distribution expenses, cleaning materials etc. cannot be directly attributed to cost units produced. The costing treatment of overheads deals with methods whereby these indirect expenses can be related to cost units. CIMA defines Overheads Cost as “the total cost of indirect materials, indirect labour and indirect expenses”.

The direct expenses refers to expenses that are specifically incurred and charged for specific or particular job, process, service, cost unit or cost centre. These expenses are also called chargeable expenses. The sum of direct material, direct labour and direct expenses is called prime cost. Sometimes, if the direct expenses are negligible or small amount, it will be treated as overhead.

Direct expenses are directly allocable to a job, process, service, cost unit or cost centre. It is not possible to allocate the overheads to jobs etc. and only through apportionment and absorption, it can be charged to different jobs, process, services, cost units or cost centres.

An expense is whether a direct expense or overhead depend on the extent of departmentalisation and specific circumstances of a particular expense. For example, a machine is hired for general purpose, the hire charges are treated as overhead. But if that machine is hired or used for specific job, then the hire charges will be direct charge to that particular job. Another example is that power consumption is normally treated as direct expense if it is consumed for single plant or machinery. But if number of machines consume the power, then power will be treated as overhead and will be apportioned to the different machine centres on some equitable basis, which have used power.

18.2 CLASSIFICATIONS OF OVERHEAD COSTS

Overhead costs may be classified according to:

- (a) Functions,
- (b) Element and
- (c) Behaviour.

18.2.1 Classification According to Functions

The main groups of overheads on the basis of this classification are:

- (a) Production overhead,
- (b) Administration overhead,

- (c) Selling overheads,
- (d) Distribution overhead.

Production Overhead: Also termed as factory overhead, works overhead or manufacturing overhead, it means indirect expenditure incurred in connection with production operations. It is the aggregate of factory indirect material cost, indirect wages and indirect expenses. Unlike direct materials and direct labour, production overhead is an invisible part of the finished product. Examples of these costs are: lubricants, consumable stores, indirect wages, factory power and light, depreciation of plant and machinery.

Administration overhead: This consists of all expenses incurred in the direction, control and administration (including secretarial, accounting and financial control) of an undertaking which is not related directly to production, selling and distribution function. Examples are: general management salaries, audit fees, legal charges, postage and telephone, stationary and printing, office rent and rates, office lighting, and salaries of office staff etc.

Selling overhead: These are the cost of seeking to create and stimulate demand or for scoring orders. Examples are advertising, salaries and commission of sales personnel, showroom expenses, travelling expenses, bad debts, catalogues and price lists etc.

Distribution overhead: It comprises all expenditure incurred from the time product is completed in the factory until it reaches its destination or customer. It includes: packing cost, carriage outward, delivery van costs, warehousing costs, etc.

Both selling and distribution costs are incurred after the production work is over and thus taken together, these are known as 'After Production Costs'.

18.2.2 Classification According to Elements

The main classes under this head are: indirect materials, indirect wages, and indirect expenses.

18.2.3 Classification According to Behaviour

Different overhead costs behave in different ways when volume of production changes. On the basis of behaviour, overheads may be classified into: (a) Fixed overhead, (b) variable overhead, and (c) Semi-fixed or semi-variable overhead.

Fixed overhead: These overheads remain unaffected or fixed in total amount by fluctuations in volume of output. Examples are rent and rates, managerial salaries, building depreciation, legal expenses etc.

Variable overhead: This is the cost which, in aggregate, tends to vary in direct proportion to changes in the volume of output. Variable overhead per unit remain fixed. Examples are indirect materials, indirect labour, salesmen's commission, power, light, fuel, etc.

Semi-variable overhead: This overhead is partly fixed and partly variable. In other words, such costs vary in part with the volume of production and in part they are constant, whatever be the volume of production. Examples: supervisory salaries, depreciation, repairs and maintenance, etc.

18.2.4 Importance of Classifying Costs into Fixed and Variable

The fixed-variable cost classification is of great importance in planning, decision making and control as discussed below:

- 1. Preparation of budgets:** This classification helps in the preparation of budgets. For instance, when flexible budgets are prepared for different levels of activity, the fixed cost remains constant at all levels of activity, whereas variable cost varies according to the actual level of output.
- 2. Decision-making:** As most problems of decision-making relate to changes in volume, this classification acquires a special importance in managerial decision-making. This is so because fixed and variable costs behave in different ways when volume of output changes.
- 3. Control of costs:** From control point of view, cost may be controllable or uncontrollable. The fixed costs are mostly uncontrollable and if, at all, any control can be exercised, it can be done by the top management. Variable costs, on the other hand, are mostly controllable. For example, rent of building (fixed) is not easily controllable but cost of materials (variable) may be controlled by purchasing in economic lots, seasonal purchasing, etc. Classifying costs into fixed and variable, therefore, helps in the effective control of costs by pointing out where management should concentrate to control costs.

4. **Marginal costing and break-even analysis:** This technique is totally depends on segregation of cost into fixed and variable.
5. **Absorption of overhead:** By classifying cost into fixed and variable, separate rates of absorption of overhead may be used for fixed and variable overheads. The under/over absorption arising out of two types of overheads are different in nature and need different managerial action. For example, under-absorption of fixed overhead means the existence of surplus or idle capacity so that suitable steps may be taken to effectively utilise idle capacity.
6. **Other uses:** In addition to points stated above, fixed-variable cost classification is useful in many other areas. For example, while planning capital expenditure, effect of the proposed project on total fixed and variable costs should be studied. Moreover, differential and comparative cost analyses are based on this classification.

18.3 ALLOCATION AND APPORTIONMENT OF FACTORY OVERHEADS

Departmentalisation of Overhead: Generally, in big business houses, several departments are involved in the manufacture of the product or in rendering a service. In such cases, factory overhead costs should be accumulated department-wise. Departmentalisation of factory overhead means dividing the company into segments called departments or cost centres where expenses are incurred. In a manufacturing concern, there are mainly two types of cost centres-producing departments and service departments. A production

department represents a submit of the company where manufacturing activity takes place. Some typical examples of producing departments include assembly, finishing, blending, painting and grinding departments. Service departments represent cost centres which provide support for the producing departments. Materials handling, personnel, plant maintenance, imposition, storage, purchasing, receiving, shipping medical and other similar activities which are not directly involved in production are considered to be service activities.

No definite rules can be suggested which can be applicable to all concerns for departmentalisation. Most commonly, the factory is divided on the basis of functional activities with in each department which performs a single activity or group of activities. Dividing the factory into separate, inter-related and independently governed units is important for the proper control of factory overhead and the accurate costing of jobs and products. The following factors must be considered while deciding the kind of departments or cost centres to be created for factory overheads collections and cost control purposes:

1. Similarity of operations, processes and machinery.
2. Location of operations, process and machinery.
3. Responsibilities for production and costs incurrence.
4. Number of departments or cost centres.

Advantages: Departmentalisation serves two purposes: (i) closer control of factory overheads costs, and (ii) more accurate costing of jobs and products. Closer control is possible because departmentalisation makes the incurrence of costs in department or cost centre, the responsibility of someone who heads the department or the cost centre.

More accurate costing of jobs and products is possible, if products are passed through more than one department. A job or product going through a department is charged with factory overhead for work done on that product in that department. Therefore, jobs or products are charged with different amounts of factory overhead depending on the number of departments through which they pass. This process results in accurate and reliable cost figures for the products or job.

Primary distribution: Some factory overheads can be directly identified with a particular department or cost centre as having been incurred for that cost centre. Examples of such factory overheads are repairs and maintenance expenses incurred in specific departments, supervision, indirect labour, overtime, indirect materials and factory supplies, equipment depreciation.

Expenses such as power, light, rent, depreciating of factory building, expenses shared by all departments, cannot be charged directly to a department, be it producing or service. These expenses do not originate in any specific department. They are incurred for all and must, therefore, be apportioned or prorated to any or all departments using such items. Cost apportionment is the process of charging expenses in an equitable proportion to the various cost centres or departments. The Institute of Cost and Management Accountant (UK) defines cost apportionment, “as the allotment of proportions of items of cost to cost centres or cost units”. The apportionment should be done on some rational and equitable tasks. In cost accounting this is known as primary distribution of factory overhead.

It would be difficult to give a comprehensive list of the bases of apportionment, but the following bases are in common use:

1. **Floor area occupied-** Overheads such as lighting and heating, rent and rates, depreciation of building, building repairs, caretaking, watching and patrolling.
2. **Capital values-** Depreciation on plant and machinery, insurance on building, and plant and machinery, maintenance of plant and machinery.
3. **Direct labour hours and/or machine hours-** Insurance on jigs, tools and fixtures, power, works management remuneration, repairs and maintenance cost.
4. **Number of workers employed-** Canteen, accident insurance, medical, dental and first aid, pensions, personnel department expenses, profit sharing payments, recreation, supervision, time office, wages department.
5. **Technical estimate-** Fire prevention, oil and grease, steam, water without meter.

Illustration 1: Hisar Ltd. has gensets and produces its own power. Data for power costs are as follows:

Horse power hours	Production deptts.		Service deptts.	
	A	B	C	D
Needed capacity production	10,000	20,000	12,000	8,000
Used during the month of May	8,000	13,000	7,000	6,000

During the month of May, costs for generating power amounted to Rs. 9,300; of this Rs. 2,500 was considered to be fixed cost. Service Deptt. C renders service to A, B and D in the ratio 13:6: 1, while D renders services to A and B in the ratio 31:3. Given that the direct labour hours in Deptt. A and B are 1,650 hours and 2,175 hours respectively, find the power cost per labour hour in each of these two Deptt.

Solution

HISAR LTD.

OVERHEADS DISTRIBUTION SUMMARY STATEMENT

(Amount in Rs.)

Particulars	Basis of charge	Total	Production Deptts.		Service Deptts.	
			A	B	C	D
Fixed Cost	H.P. Hours needed at capacity production (5 : 10 : 6 : 4)	2,500	500	1,000	600	400
Variable Cost	H.P. hours used (8 : 13 : 7 : 6)	6,800	1,600	2,600	1,400	1,200
Total overheads		9,300	2,100	3,600	2,000	1,600
Service Deptt. C overheads apportioned to A, B and D (13 : 6 : 1)			1,300	600	-2,000	100

Service Deptt. D overheads apportioned to A and B (31 : 3)			1,550	150		-1,700
Total overheads of production Deptts.			4,950	4,350	-	-
Labour hours worked			1,650	2,175		
Power cost per labour hour			3.00	2.00		

18.4 APPORTIONMENT OF SERVICE DEPARTMENTS OVERHEADS TO PRODUCING DEPARTMENTS

Secondary Distribution: It is necessary that overhead cost of service departments (accumulated through direct allocation or primary distribution) should be further assigned to producing departments. This is due to the reason that service departments do not themselves manufacture anything and it is the production department or cost centres which are involved in manufacturing activities. The reassignment or reapportionment of service departments overhead to producing departments or centres is termed as secondary distribution.

Secondary distribution helps in determining the cost of products or jobs sold and value of inventory. It is useful in determining the effect of various managerial decisions and actions on the total cost of the business firm. For example, decisions as to add or to drop a product line require information about its cost effect, which can be estimated after secondary distribution has been made. Secondary distribution also helps subsequently in determining the price of the product or job. In case of contracts based on cost in place of market price, secondary

distribution helps in fixing a selling price which is advantageous to the parties concerned.

Bases of Secondary Distribution: The general basis for apportioning service departments' overheads to producing departments are the following:

1. **Services rendered-** This is perhaps the most popular method of apportioning service department. The services rendered to different departments, i.e., benefits obtained by them can be a suitable basis. If a producing department has received large benefits, it must be charged for a share of overheads costs incurred to provide that quantity of benefits. This method is simple and economical.
2. **Ability to pay-** This method suggests that a large share of servicing departments overhead costs should be assigned to those producing departments whose product contributes the most to the income of a business enterprise.
3. **Surveyor analysis-** This method is applied where a suitable base is difficult to find or it would be too costly to select a method which is considered suitable. For example, the postage cost could be apportioned on a survey of postage used during a year.
4. **Efficiency or incentives-** This method uses standards and budgets and apportions the overhead costs on the basis of a present budget or standard.

In selecting a suitable base for apportioning service department overheads, considerations should be given to practicability, simplicity, economy, theoretical soundness and assistance in accurate costing and cost control.

Inter-departmental Services: While depreciation service departments overheads, one may notice two situations: (i) The entire amount of a servicing department is to be distributed to only the producing departments. This does not involve any practical difficulty and provides the simplest and quickest method for apportioning costs of the servicing department (ii) Services provided by some servicing departments are used partly by other servicing department. That is, many service department serve each other. For example, the payroll department in a firm prepares payroll for the entire organisation, but it depends on the building maintenance department for repair and maintenance services.

Illustration 2: The overhead of a manufacturing company has been analysed to the point of primary distribution:

		Rs.
Production departments:	Machine	10,000
	Assembly	4,000
Service departments	Canteen	2,000
	Powerhouse	3,000

The canteen is to be apportioned on the basis employees:

	Employees	%
Machine	240	60
Assembly	140	35

Powerhouse	20	5
	400	100

The powerhouse is to be apportioned on the basis of electricity used:

	Thousand Kilowatts	%
Machine	270	75
Assembly	36	10
Canteen	54	15
	360	100

Solution: The apportionment would be done in the following manner:

	Machine	Assembly	Canteen	Powerhouse
Primary apportionment	10,000	4,000	2,000	3,000
Apportion: Canteen	1,200	700	-2,000	100
Powerhouse	2,325	310	465	-3,100
Canteen	279	163	-465	23
Powerhouse	18	2	3	-23
Canteen	2	1	-3	
Total Service Deptts.	4	1176		
Total Production Overhead	13824	5176		

18.5 ABSORPTION OF FACTORY OVERHEADS

Absorption of factory overheads refers to charging of the factory overheads of a particular production department to various products manufactured, or jobs completed, or orders executed in that department. The methods for absorption of these overheads may be put into two categories:

- (i) Percentage methods

- (ii) Hourly rate methods.

Choice of a particular method depends on the circumstances of each individual case. As such the method of absorption may differ from industry to industry, and from company to company also. As far as possible, the method applied should be equitable so that the absorbed overheads are not in much difference with the actual overheads. Otherwise it will lead to excessive under or over absorption, simply because of the adoption of a particular method.

Percentage methods

1. **Direct material cost method:** In this method the cost of direct materials used in the manufacture of a product is used as the basis for allocation of factory overheads. The overhead rate is therefore, calculated on the basis of the following formula:

$$\text{Factory overhead rate} = \frac{\text{Amount of factory overheads}}{\text{Cost of direct materials used}} \times 100$$

This method may give satisfactory results in the following circumstances:

- (i) Where the amount of overheads is insignificant in relation to cost of materials and wages and, therefore, a simple method of allocation is desired.
- (ii) Where output is uniform, i.e., one kind of article is produced.
- (iii) Where the prices of materials do not fluctuate quite widely and frequently.

The method will not give satisfactory results except in the above cases on account of the following reasons:

(i) Except a few items, factory overheads do not vary with variations in the value of material. Normal wastage of materials or coal or other sundry small stores used in manufacture naturally varies with the value of materials used, otherwise other important items such as works manager's salary, factory rent, rates, insurance, lighting etc. do not vary with every change in the value of materials. Consider the following example:

The following were the constituents of cost of Product X in 2005

	Rs.
Direct Material	25,000
Direct Labour	10,000
Factory Rent & Rates	5,000
Factory Manager's Salary	15,000
Other Factory Expenses	1,000
Office Overheads	2,500
	45,500

The factory overhead rate based on materials comes to:

$$\frac{7500}{25000} \times 100 = 30\%$$

Suppose in 2006 the value of materials used in doubled on account of doubling of the price level. If the factory overheads are charged @ 30% on materials, it will result in excessive over-absorption of works overheads, because most of the factory overheads are fixed.

(ii) This method will result in greater recovery of factory overheads from those cost units which use superior quality of materials in comparison to those which use materials of inferior quality. This seems very illogical because actually reverse should have been the case.

(iii) This method does not make any distinction between jobs done by skilled and unskilled workers, because works overheads not only depend upon materials used but also on the type of workers employed. Similarly it does not distinguish between manual and machine work.

2. Direct labour cost method: The cost of direct labour incurred in the manufacture of the product is used as a base for allocation of factory overheads in this method. The formula for calculating the factory overhead rate based on labour can be put as follows:

$$\text{Factory Overhead Rate} = \frac{\text{Amount of factory overheads}}{\text{Cost of direct labour}} \times 100$$

Merits: This method has the following advantages:

1. Factory overheads to a great extent depend upon the number of workers employed and the rate of direct wages. This method, therefore, gives satisfactory results in most cases.
2. The method is widely adopted on account of its similarity and of accuracy.
3. Direct wages normally do not fluctuate much. Therefore, this method gives stable results.

Demerits: It has the following disadvantages:

1. The method is not suitable where both skilled and unskilled workers are employed. As a matter of fact the amount of works overheads is less for skilled workers in comparison to the unskilled workers and, therefore, jobs done by the unskilled workers should be charged with greater amount of factory overheads, but reverse happens in case of this method.

2. Works overheads also depend upon time. The method therefore, does not give satisfactory results where the workers are remunerated on piece wage system.

3. **Prime cost method:** The method considers both direct materials and direct labour for allocation of overheads. The formula for calculating the factory overhead rate, therefore, can be put as follows:

$$\text{Factory Overhead Rate} = \frac{\text{Amount of factory overheads}}{\text{Prime cost}} \times 100$$

The method has the advantage of simplicity. However, it suffers the same drawbacks from which the first two methods suffer and, therefore, is rarely used.

The method can give satisfactory results where a standard article is produced, requiring a constant quantity of materials and number of hours engaged upto its manufacture.

Hourly rate methods

(i) **Machine hour rate method:** The machine hour rate method of allocation of factory overheads is used in those cases where the processes of manufacture are carried out by machines and there is very little or practically no manual labour. It is determined by dividing the

overhead cost to be apportioned or absorbed by the number of machine hours expended or to be expended. The formula for calculating the overhead rate may be put as follows:

$$\text{Overhead rate} = \frac{\text{Amount of factory overheads}}{\text{Machine hours}}$$

The method thus estimates the cost of running a machine for one hour and a job is debited with an amount of overheads equal to the number of hours for which the machine was used on that job multiplied by the hourly rate. The steps for computing the machine hour rate may be put as follows:

1. All factory overheads are departmentalised as discussed before. The overheads of the Service Department are also apportioned among all Production Departments.
2. Each Production Department is divided into suitable cost centres comprising groups of similar machines, and the total factory overheads are apportioned among the different cost centres suitably as discussed before.
3. Machine hour rate is to be calculated for each machine separately and, therefore, overheads of one machine cost centre will be apportioned among the different machines to find out the amount of overheads per machine.
4. The overheads thus calculated will be divided between (i) Fixed or Standing charges, (ii) variable or Machine expenses. Fixed charges are those which remain constant irrespective of the use of the machine, e.g., rent, insurance charges etc. Variable expenses such as power, depreciation etc. vary with the use of machine.

5. An hourly rate of fixed charges will be calculated by totalling them and dividing by the number of normal hours worked by the machine.
6. The total of the fixed charges rate and the machine expenses rate will give the Machine Hour rate.

BASIS FOR APPORTIONMENT OF DIFFERENT EXPENSES

Expenses	Basis
Standing Charges	
1. Rent and Rates	According to the floor area occupied by each machine including the surrounding space.
2. Heating and lighting	The number of points used plus cost of special lighting or heating for any individual machine, alternatively according to floor area occupied by each machine.
3. Supervision	Estimated time devoted by the supervisory staff to each machine.
4. Lubricating oil and consumable stores	Capital values, machine hours, or past experience.
5. Insurance	Insured value of each machine.
6. Miscellaneous expenses	Equitable basis depending upon facts.

Illustration 2: A machine cost Rs. 90,000 and is deemed to have a scrap value 5% at the end of its effective life (19 years). Ordinarily the machine is expected to run for 2,400 hours per annum but it is estimated that 150 hours will be lost for normal repairs and maintenance and further 750 hours will be lost due to staggering.

The other details in respect of the machine shop are:

- (a) Wages, bonus and provident fund Rs. 6,000 per year contribution of each of two operators (each operator is in charge of two machines)
- (b) Rent and rates of the shop 3,000 per year
- (c) General lighting of the shop 250 per month
- (d) Insurance per annum for the machine 200 per month
- (e) Cost of repairs and maintenance per machine 250 per month
- (f) Shop supervisor's salary 500 per month
- (g) Power consumption of machine per hour 20 units, rate of power per 100 units Rs. 10
- (h) Other factory overheads attributable to the shop, Rs. 4,000 per annum.

There are four identical machines in the shop. The supervisor is expected to devote one-fifth of his time for supervising the machine. Compute a comprehensive machine hour rate from the above details.

Solution

Computation of machine hour rate	Rs.	Per hour
Standing charges per annum		
Rent and rates	750	
General lighting	750	
Insurance	800	
Supervisor's salary	1,200	
Allocated overhead	1,000	
	4,500	

Standing charges per hour, 4500 >> 1500		3.00
Machine expenses per hour wages, etc.		2.00
Power		2.00
Repairs and maintenance		2.00
Depreciation		2.00
Machine hour rate		12.00

Note: Effective machine hours are 1,500 (2,400 – 150 – 750).

Illustration 4: A machine was purchased on January 1, 2004 for Rs. 5 lakhs. The total cost of all machinery inclusive of the new machine was Rs. 75 lakhs. The following particulars are further available:

Expected life of machine 10 years

Scrap value at the end of 10 years Rs. 5,000

Repairs and maintenance for the machine during the year Rs. 2,000

Expected number of working hours of machines per year 4,000 hours

Insurance premium annually for all the machines Rs. 4,500.

Electricity consumption for the machine per hour (@ 75 paise per unit) 25 units

Area occupied by the machine 100 sq. ft.

Area occupied by other machine 1,500 sq. ft.

Rent per month of the department Rs. 800.

Lighting charges for 20 points for the whole department, out of which three points are for the machine Rs. 120 per month.

Compute the machine-hour rate for the new machine on the basis of the data given above.

Solution: Computation of machine hour rate

Standing charges	Rs. (p.a.)	Rs. (per hour)
Insurance Premium, (WN:2)	300	
Repair and Maintenance	2,000	
Rent (WN:3)	600	
Light Charges (WN:4)	216	
Total Standing Charges	3,116	
Hourly Rate for Standing Charges (Rs. 3,116/4,000 hours)		0.779
Machine Expenses Depreciation (WN:1)*		12.375
Electricity Consumption 25 units per hour @ 0.75 p. per unit		18.750
Machine Hour Rate		31.904

*Depreciation may also be taken as a standing charge.

Working Notes

	Rs.
1. Depreciation of machine:	
Cost of new machine	5,00,000
Less: Scrap value	5,000
	4,95,000
Net cost of the machine	
Life of the machine 10 years	
Depreciation per hour = $\frac{\text{Rs. 4,95,000}}{10 \text{ years} \times 4,000}$	= 12.375
2. Insurance for the Machine:	

Total cost of all the machines	75,00,000
Total insurance premium paid for all the machines	4,500
Total annual insurance premium of the new machine = $\frac{\text{Rs. 4,500 n Rs. 5,00,000}}{\text{Rs. 75,00,000}}$	= Rs. 300

3. Rent for the Machine

Rent paid per annum	Rs. 9,600
Total area occupied	1,600 sq. ft.
Rent for the area occupied by the new machine = $\frac{\text{Rs. 96000} \times 100 \text{ sq. ft.}}{1,6000 \text{ sq. ft.}}$	Rs. 600

4. Lighting Charges for the Machine:

Total annual light charges of 20 points for the whole department is Rs. 1,400.

Light charges for the machine p.a.

$$= \frac{\text{Rs. 1,440} \times 3 \text{ points}}{20 \text{ points}} \quad \text{Rs. 216}$$

2. Labour hour rate method: According to this method, the overheads are charged to production on the basis of number of labour hours of work put forth on every job. The overhead rate is calculated by dividing the total works overheads for the shop or department for a given period by the total estimated direct labour hours for the same period. The formula for calculating the overhead rate may be put as follows:

$$\text{Overhead Rate} = \frac{\text{Amount of overheads}}{\text{Total Number of Direct Labour Hours}}$$

This method of allocating overhead is adopted for those departments where hand labour is a predominating factor in production. It gives very satisfactory results because incidence of most overheads is proportional to time and this method give due consideration to the time factor.

Illustration 5: The following information relates to the activities of a production department for a certain period in a factory:

	Rs.
Materials used	72,000
Direct wages	60,000
Hours of Machine operation	20,000
Labour hours worked	24,000
Overheads chargeable to the department	48,000

Prepare a comparative statement of cost of this order by using the following three methods of recovery of overheads:

- (i) Direct Labour Hour Rate Method;
- (ii) Direct Labour cost Rate Method;
- (iii) Machine Hour Rate Method.

Solution

- (i) Direct Labour Hour Rate Method

$$\text{Direct Labour Hour Rate} = \frac{\text{Overheads chargeable to the department}}{\text{Labour hours worked}}$$

- (ii) Direct Labour Cost Method:

$$\begin{aligned} &\text{Percentage of Direct Labour Labour Cost} \\ &= \frac{\text{Overheads for the department}}{\text{Direct wages}} \times 100 \end{aligned}$$

$$= \frac{48,000}{60,000} \times 100 = 80\%$$

(iii) Machine Hour Rate Method:

$$\text{Machine Hour Rate} = \frac{\text{Overheads for the department}}{\text{Hours of machine operation}}$$

$$= \frac{48,000}{60,000} = \text{Rs. 2.4}$$

COMPARATIVE STATEMENT OF COST OF ORDER

Particulars	Direct Labour Hour Rate (Rs.)	Direct Labour Cost Rate (Rs.)	Machine Hour Rate (Rs.)
Material used	4,000	4,000	4,000
Direct wages	3,300	3,300	3,300
Prime Cost	7,300	7,300	7,300
Factory overheads:			
At Rs. 2 per hr. for 1,650 labour hrs.	3,300	-	-
At 80% of Rs. 3,300 (direct labour cost)	-	2,640	-
At Rs. 2.4 per hr for 1,200 machine hours	-	-	2,880
Works Cost	10,600	9,940	10,180

3. Dual hour rate method: Where in a shop both manual labour and machines play an equally important roles overheads are classified into two categories:

- (i) those which relate to manual work, such as proportionate charge for lighting and foreman's salary, employee's insurance premium etc.;
- (ii) those which relate to machines as depreciation, power, repairs, operator's wages etc.

The former [i.e. (i)] when divided by the number of direct labour hours will give the direct labour hour rate, and the latter [i.e. (ii)] on being divided by the number of machine hours will give the machine-hour rate. A job will be debited with the amount of overheads calculated on the basis of these two rates. For example, if the direct labour-hour rate is Re. 1 and machine-hour rate is 50 paise, a job requiring 10 direct labour hours and 15 machine hours should be debited with Rs. 17.50 (i.e. $10 \times 1 + 15 \times 0.50$) as overheads.

Illustration 6: The following information for the month of April is extracted from the cost records of Ram and Shyam Ltd. which specialises in the manufacture of automobile spares. The parts are manufactured in Department R and assembled in Department S.

	Total (Rs.)	Deptt. R (Rs.)	Deptt. S (Rs.)
Direct Material	65,000	50,000	15,000
Direct Labour	90,000	40,00	50,000
Factory Rent	15,000		
Supervision	6,000	2,500	3,500
Deprecation, on Machines	5,000		
Power	4,000		
Repairs to Machines	2,000	1,600	400

Indirect Labour	4,000	2,000	2,000
Direct Labour Hours Worked	80,000	30,000	50,000
Machine Hours worked	30,000	25,000	5,000
Machine Hours Power (H.P.)	400	353	47
Book Value of Machines (Rs.)	50,000	40,000	10,000
Floor Space (sq. ft.)	20,000	10,000	10,000

The Prime Cost of Batch B 401 has been booked as under:

	Total (Rs.)	Deptt. A (Rs.)	Deptt. B (Rs.)
Materials	3,200	2,700	500
Labour	7,500	3,000	4,500

Direct Labour Hours worked on batch S 401 were 2,500 in Department R and 5,000 in Department S. Machine Hours worked in this batch were 1,250 in Deptt. R and 600 in Deptt. S. Allocate overhead expenditure and calculate in cost of each unit in batch S 401 which consists of 1,000 units.

Solution: It seems both men and machines are playing equally important roles in production, hence it will be appropriate to charge overheads according to Dual Hour Rate Method. Consequently machine costs have been absorbed on the basis of machine hour rate and other overhead costs on the basis of direct labour hour rate.

RAM & SHYAM LTD.

DEPARTMENTALISATION OF OVERHEAD COSTS

Machine Costs:	Basis	Total (Rs.)	Deptt. R (Rs.)	Deptt. S (Rs.)

Depreciation	Plant Value (4 : 1)	5,000	4,000	1,000
Power	Hours power (353 : 47)	4,000	3,530	470
Repairs of Machines	Actual	2,000	1,600	400
Total Machine Cost		11,000	9,130	1,870
Other overhead costs				
Factory Rent	Floor Space (1 : 1)	15,000	7,500	7,500
Supervision	Actual	6,000	2,500	3,500
Indirect Labour	Actual	4,000	2,000	2,000
Total: Other overhead Costs		25,000	12,000	13,000

		Deptt. R	Deptt. S
Machine Hour Rate	=	$\frac{\text{Rs. 9,130}}{25,000}$	$\frac{\text{Rs. 1,870}}{5,000}$
	=	Rs. 0.3652	Rs. 0.374
Labour Hour Rate	=	$\frac{\text{Rs. 12,000}}{30,000}$	$\frac{\text{Rs. 13,000}}{50,000}$
	=	Rs. 0.40	Rs. 0.26

COST SHEET OF BATCH S 401 (CONSISTING OF 1,000 UNITS)

	Total (Rs.)	Deptt. A (Rs.)	Deptt. B (Rs.)
Materials	3,200	2,700	500
Labour	7,500	3,000	4,500
Overhead Costs	2,981	1,457	1,524
	13,681	7,157	6,524

$$\text{Cost of each unit} = \frac{\text{Rs. 13,681}}{1,000} = \text{Rs. 13.68}$$

Working Notes

OVERHEAD COSTS ALLOCATION TO BATCH S 401

		Rs.
(i)	<i>Deptt. R</i> Machine Cost ($1,250 \times 0.3652$)	456.50
	Other Overhead Costs ($2,500 \times 0.40$)	1,000.00
		<hr/> 1,456.50
(ii)	<i>Deptt. S</i> Machine Costs (600×0.374)	224.40
	Other Overhead costs ($5,000 \times 0.26$)	1,300.00
		<hr/> 1,524.40

18.6 DEPRECIATION

Depreciation is provided in cost accounts before working out the profitability of a job or cost unit. Depreciation is a gradual diminution, loss, or shrinkage in the utility of value of an asset due to wear and tear in use, affluxion of time or obsolescence. Depreciation is the allocation of the depreciable amount of an asset over its estimated useful life.

The cost of a product consists of not only normal expenses like direct material, direct labour, factory cost etc. which involve in cash outgo but also non-cash like depreciation which does not involve in cash outgo.

CIMA defines depreciation as “the measure of wearing out, consumption or other loss of value of fixed asset whether arising from use, fluxion of time or obsolescence through technology and market changes.” Depreciation does not mean set money aside for the future replacement of assets. It is provided to match the use of asset, its deterioration and obsolescence with the income it generates.

Depreciation and Cash Flow: Depreciation is neither a source nor a use of funds. The use of funds obviously began when the fixed asset was purchased. It would be double counting to regard each year's depreciation as a further use of funds. The relevant figure for profit from operation profit before charging depreciation. The quantum of operational funds flow cannot be influenced by the method of depreciation charged.

Depreciation and inflation: Depreciation should be provided irrespective of the increase in value of asset due to inflation. It is not appropriate to omit charging depreciation of a fixed asset on the grounds that its market value is greater than its net book value. If account is taken of such increased value by writing up the net book value of a fixed asset, then, an increased charge for depreciation will become necessary.

Methods of Depreciation

The following are the methods of depreciation

1. Straight line method: This method provides for depreciation by means of equal periodic charges over the life of the asset. For example, suppose the cost of a plant is Rs. 1,00,000 and its life is 10 years. Then the charge of depreciation per annum will be Rs. 10,000.

2. Diminishing balance method: This method tends to write-off higher amounts in the beginning and comparatively lower amounts in subsequent parts of the life of an asset. The amount of depreciation is calculated at a constant rate at the balance of the value

of the asset after deducting the amounts of depreciation previously provided. For example, taking the above illustration, the amounts of depreciation at the rate of 10% p.a. would be Rs. 10,000 for the first year, Rs. 9,000 for the second year, Rs. 8,100 for the third year, and so on.

3. Production unit method: This method charges the amount of depreciation by means of fixed rate per unit of production calculated by dividing the value of the asset by the estimated number of units to be produced during its life. The formula for calculating depreciation under this method is as follows:

$$\text{Depreciation (per unit)} = \frac{\text{Original cost - residual value}}{\text{Estimated output during its life}}$$

4. Annuity Method: This method assumes that the capital used in the purchase of plant should have earned interest if invested somewhere else. The amount of depreciation in this method is calculated by dividing the aggregate of the cost of the asset depreciated and interest at a given rate, at a constant rate, on the written down value of the asset.

5. Sinking fund method: Under the annuity method, expected interest of the investment (equivalent to the cost of the asset) is assumed. However, no actual investment is made. But under the sinking fund method, the amount of depreciation written off every year is invested in some securities, which would accumulate at compound interest to provide, at the end of the life of the asset, a sum equal to its costs. This method provide for depreciation of fixed periodic charges.

6. Endowment policy method: This method is similar to the sinking fund method. It provides for depreciation by means of fixed periodic charges equivalent to the premium on an endowment policy for the amount required to provide, at the end of the life of the asset, a sum equal to its cost. The amount of depreciation is equivalent to the premium payable on the policy.

7. Production hour method: This method provides for depreciation by means of a fixed rate per hour of production by using the following formula:

$$\text{Depreciation (per unit)} = \frac{\text{Cost of the asset}}{\text{Estimated number of working hours of its life}}$$

8. Sum of digits method: Under this method depreciation is calculated by means of differing periodic rates computed according to the following formula: If it is the estimated life of the asset, the rate is calculated each period as a fraction in which the denominator is always the sum of the series 1,2,3, ... n and the numerator for the first period is n, for the second n-1, and so on. In this method, depreciation is highest in the year of purchase and go on reducing in the subsequent accounting periods. This method is mainly used in assets like, furniture, electronic goods, automobile vehicles etc. In this method differing periodic rate are used.

18.7 PLANT REGISTER AND OTHER FIXED ASSETS REGISTER

A plant register is maintained keeping all details about the plant and machinery. It generally contains the following details:

- Description of each individual machine, identification number, original cost of the machine, name of supplier, date

of installation and commercial run, etc. Technical details like speed, fuel consumption, capacity, grade and quality of output etc.

- Details of the asset located in the factory. Details of estimated economic life, estimated output or production run hours during the economic life time, method of depreciation, estimated residual or scrap value etc.
- Details of capital allowances, balancing charges or other allowance.
- Details of major break-downs and maintenance.
- Details of additions and alterations.
- Details of disposal of asset.

A register is also maintained for other fixed assets like buildings, vehicles, furniture and fixtures etc. similar to that of plant register.

These registers will enable calculation of depreciation, book values etc. of each item and it will enable to allocate and apportion depreciation charges and other overhead costs like, repairs and maintenance, insurance etc.

18.8 USING ASSET AFTER FULLY DEPRECIATED

Sometime it will happen to continue in use of an asset after it is fully depreciated. The main reason for early recovery of depreciation is due to under estimation of economic life of the asset. In such situations it is usual to continue to charge depreciation so as to maintain cost comparability with previous accounting periods and current cost of the product will reflect the cost of using the asset. The excess depreciation so charged will either be kept in reserve against obsolescence or

credited to Costing Profit and Loss Account. If before the asset is fully depreciated, its economic life is estimated to be further extended, then the balance depreciation will spread over to such enhanced period, and the problem of using asset after it is fully depreciated will not arise.

18.9 RESEARCH AND DEVELOPMENT COSTS AND ITS TREATMENT

The Research and Development expenditure is a deferred charge which is in the nature of non- recurring expenditures which are expected to be of financial benefit to several accounting periods of indeterminate total length. It is the expenditure incurred for searching a new product or improved product or new methods of production and improved technologies.

Research Costs are incurred for carrying basic research or applied research. But the development costs start with decision taken to produce new product or improved product and when the decision is taken to adopt new technologies and new production methods. The objective in carrying basic research is to improve the existing scientific and/or technical knowledge. But the applied research is carried for a purpose directed towards a specific practical aim or objective.

Treatment of Research Costs: The treatment of research costs is studied under two heads:

1. Basic research costs (2) Applied research costs.

1. Basis Research Costs: These costs relate to all existing product, methods of operation, techniques of production and, therefore, the basic research costs should be treated as production overhead for

the period during which it has been incurred and has to be absorbed into product costs.

2. Applied Research Costs: The applied research costs is classified into two for absorption purpose:

- (i) If applied research costs relate to improvement of existing product and methods of production, it should be treated as manufacturing overhead for the period and has to be absorbed to the product cost.
- (ii) In case, applied research costs are incurred for searching new products or methods of production etc., then such costs are amortised to the product that is newly invented or new method of production adopted. The whole of such expenditure should not be absorbed in the year in which expenditure has been incurred but a part it should be carried over the expenditure which, though of revenue nature is spread over a number of years because its benefit is derived during those years.

When the applied research aimed at improvement of existing product or to invent a new product or development of new technology, and if the research works appears failure in getting the desired results, then such applied research expenditure is charged against profit in the Costing Profit and Loss Account of one or more years depending upon the size of expenditure incurred.

18.10 TREATMENT OF DEVELOPMENT COSTS

Development costs begin with the implementation of the decision to produce a new or improved product or to employ a new or improved method. The treatment of development costs is similar to that of treatment of applied research costs.

18.11 TREATMENT OF SPECIAL ITEMS OF OVERHEADS IN COST ACCOUNTS

Material handling expenses: These expenses are incurred while unloading the raw materials received from supplier, storing the raw materials, handling the raw materials to work place, handling of work- in-progress, storage of finished goods etc. It also includes costs incurred for weighing salaries of personnel involved in material handling, wear and tear of weighing equipment. These costs are apportioned on the basis of physical quantities of different materials and goods handled in the factory. The stores overhead costs are apportioned to raw materials and finished goods as a percentage of issue rates. Other handling expenses are recovered through overhead recovery rates.

Market research expenses: Market research cost is an item of selling overhead, incurred for market intelligence to ascertain the tastes and habits, market penetration of product, increase in demand of existing products, competitive situation, trading practices, distribution channels, customers requirements, existing and potential market for the product etc. If the market research expenses are incurred for a single product it is absorbed into that particular product cost. If it is incurred for the product range for the enterprise as a whole, then the market research expenses are to be apportioned to different products in

the proportion of sales value and absorbed into respective product cost. If the market research cost is substantial, it will be deferred revenue expense and is taken into future period and absorbed when sales or production takes place.

Sometimes market research expenses are incurred for raw material availability, such expenses will be allocated or apportioned to purchase department and it is recovered through overhead rate of purchase department.

Subscriptions and donations

- If these expenses are incurred for the benefit of or welfare of workers, it is treated as production overhead.
- If subscriptions and donations for any technical and research institutions for obtaining data relating to technical, production scientific nature, it is considered as production overhead.
- If subscriptions to journals etc. for obtaining market data which help in increase of sales, it is considered as selling overhead.
- If the subscriptions and donations not incurred for the benefit of employees or the organisation, it should be excluded from the cost accounts.

After Sales Service Costs: The costs are incurred for providing service to the customers after the sales took place during the warranty period. If the costs are incurred during the period of guarantee given to the customer, it is to be borne by the company, and hence it is treated

as production overhead absorbed into product cost by applying predetermined absorption rates.

If the after sales services cost are incurred after the guarantee period for which the organisation will charge for the services rendered, then costs are treated as selling overhead.

Royalties and patent fees: The royalties and patent fees are payable for the use of technology, skills, brand, intellectual property rights etc. made in the form of periodical rent or based on the number of units produced or sold. If it is based on sales, the expenditure is charged to selling overhead. If it is fixed periodical rent, it is treated as production overhead. If it is payable on number of units produced, the expenditure is treated as a direct expenses or chargeable expenses and is forming part of the prime cost of the product.

Training Costs: The training costs are incurred for training the workers, apprentices, office, administrative and selling staff. The training expenditure incurred for training the workers, apprentices and other production staff is treated as production overhead. The expenses incurred for training the sales staff is treated as selling overhead.

If there is any in house training college or centre, cost of running the centre or college is apportioned to the cost centres based on the number of personnel trained on the basis of wages and salaries paid etc.

Taxation: Taxation is an appropriation of profit earned by the organisation and any payment of taxes is excluded from the cost accounts. But the taxes will also be considered for planning and

decision making exercises wherever it is necessary and appropriate for special purposes.

Financing charges for acquisition of fixed assets and Inventories: The finance charges like interest on working capital facilities from banks, interest on term loan for acquisition of fixed assets, interest on debentures etc. is payable by the company.

Where financing charges are payable to outsiders on borrowings for acquisition of fixed assets, these charges are included in cost of fixed assets. If the financing charges are payable for financing working capital then these charges are included in cost of inventories.

Interest on capital provided by the owners is excluded from cost accounts except for comparing or evaluating profitability of alternative investments.

If the charges are payable for storing the materials like timber, wine etc. the charges are included in the cost of materials store.

Costs of Tools: Tools are classified into large tools and small tools. The cost of large tools are capitalised like any other machine and depreciation is provided on it in each accounting period over its useful economic life.

The cost of small tools are treated in any of the following three method in cost accounts:

- **Capitalisation method:** Under this method the cost of small tools is capitalised and depreciation is recovered as production overhead. If the life of small tools is relatively small, this method is not suitable.

- **Revaluation method:** Under this method, the small tools are revalued at the end of each accounting year and the difference between original cost and the revalued cost is charged as production overhead.
- **Write off method:** Under this method, the cost centre drawing such tools is debited with the value thereof. Alternatively, the total cost of tools is accumulated and apportioned to various cost centres on suitable basis.

Bad Debts: When the company allow credit to its customers as part of its selling policy, some credit sale may turn bad due to default by the customers internationally or otherwise. As a safe guard, a part of such default amount treated as bad debt is recovered as a selling overhead and absorbed in product cost.

If the bad debt is abnormal in nature, the abnormal portion in excess of the standard normal portion should be excluded from cost accounts and transferred to Costing Profit and Loss Account.

Notional Rent: Notional rent is a cost included in the cost accounts so as to represent a benefit enjoyed by the organisation even though no actual cost is incurred for rent. The company owned premises does pay rent, but it is considered as notional charge in the cost of accounts for comparability of cost with different accounting period and with other organisations. This would reflect the accurate cost of cost centre or cost unit. It is a reasonable or nominal charge included in the cost accounts for the owned premises as if it is a rented premises.

Packing expenses: The packing is classified into (i) Primary Packing and (ii) Secondary packing.

The primary packing is done when the material is packed in tines, bottles, jars, etc., without which a product cannot be sold. For example, jam is packed in bottles, baby food packed in tin, beverages in bottles etc. The costs incurred on primary packing materials is treated as part of direct material cost.

If the packing is made to facilitate the transportation and distribution of the finished product, it is called secondary packing and the cost incurred for this is treated as distribution overhead.

Sometimes, cost is incurred on packing the product to make it more attractive to the customers to increase sales. This cost is treated as advertisement cost and is included in selling overhead.

Stores Overhead: The stores department in an organisation perform the function like receipt of material and stores items purchased, storing and issue of materials and stores items to different departments. The stores is considered as a separate cost centre and the store expenditure like rent of store, salaries and wages of stores personnel, freight, carriage inwards, insurance etc., are collected separately for the stores and will be apportioned to other cost centres. The following bases are used in apportionment of stores overhead:

- Number of stores requisitions
- Value of material requisitioned
- Standard predetermined stores overhead absorption rate

Transport Cost: The classification of transport costs and their treatment in cost accounts is given below:

- The costs incurred to bring the materials to the production site is included in cost of materials.

- The costs incurred for bringing the plant and machinery, equipment etc., is added to the capital cost of respective asset and depreciation is recovered.
- The cost of despatch of finished goods is treated as distribution overhead.
- The costs incurred for internal movements within work are initially charged to specific cost centres and thereafter apportioned to different production and service centres on the basis of services rendered.

Insurance Cost: The treatment of insurances cost is categorised into the following:

- Insurance premium on storage-cum erection and commissioning is capitalised to the asset value.
- Premium on transit of materials is included in cost of materials.
- Premium on transit of finished products is treated as distribution overhead. Premium on loss of profit policy due to tire and break down of machinery is treated as production overhead.
- Premium on miscellaneous policies like vehicles, burglary, accident etc. are treated as administration overhead.
- Premium on raw materials and stores is treated as production overhead. Premium on warehouse and finished stock is treated as distribution overhead.

18.12 INTEREST ON CAPITAL

There is a difference of opinion as to whether interest on capital employed in manufacture should be treated as an item of cost. The following arguments are given in support of treating interest as an item of cost:

1. Interest is the reward of capital just as wages are the reward of labour. Profit, in the true sense, cannot be computed without considering interest.
2. The comparison of operations, different processes, etc. without due consideration of the interest factor may lead to unreliable conclusions.
3. Interest considers time factors as it is computed on the basis of time and time is regarded as an important factor in production.
4. The inclusion of interest is of particular importance where articles of different values are produced and the capital invested in each product line differs considerably.
5. The cost of carrying inventory cannot be determined without giving due recognition to the interest on capital employed in it.

The following arguments are against including interest in the cost accounts:

1. Cost accounting considers only actual expenditures and can include only interest paid.
2. The interest factor is in no way connected with cost of manufacture. Whatever may be the method of raising

finances-owned capital loans, debentures, etc. does not affect manufacturing cost. It only affects the profits of the period.

3. Inclusion of interest in product costing will inflate the values of inventory and work-in-progress and therefore will tend to increase the profit unreasonably.
4. Interest is calculated on capital and the term “capital” has many concepts such as total capital employed in business, equity capital and borrowed capital both.
5. A reliable and correct rate of interest is difficult to determine and is likely to be influenced by naked fluctuations.
6. The cost accounting and product costing systems get complicated unnecessarily by inclusion of interest on capital and financial statements also become misleading.

There is one point upon which opinion is not divided. If interest is to be considered at all, it must not be confined merely to such interest as may actually have been paid by the business. Therefore, if it is decided to exclude interest from the cost accounts, interest which has been paid, must also be ignored.

Of late, cost accounts in India tend to agree that interest on capital or funds borrowed from outside and paid or to be paid in cash should be included in product cost. This has been supported on the grounds that it implies cash outflow and affects the operating results of a business firm. The Bureau of Industrial Cost and Price in India includes actual interest on borrowed funds as an element of cost in cost

price studies. However, the Bureau does not considered the notional type of interest on owned capital as an element of cost.

18.13 SELLING AND DISTRIBUTION OVERHEADS

Selling and distribution costs are usually incurred after the production of products or services is completed, and therefore, such costs are sometimes known as 'After Production Costs'.

Selling cost is “the cost of seeking to create and stimulate demand (sometimes termed marketing) and of securing order”. These costs are thus incurred for increasing sales to the existing and potential customers. Examples and advertisement, samples and free gifts, show-room expenses etc.

Distribution cost is “the cost of sequence of operations which begins with making the packed product available for despatch and ends with making the re-conditioned returned empty packages, if any, available for re-use”. Thus distribution costs are incurred in placing the articles in the possession of the customers. Examples are carriage outwards, insurance of goods-in-transit, maintenance of delivery vans, warehousing etc.

For costing purposes, selling costs and distribution costs are generally considered together although in some circumstances, it is desirable to deal with them separately.

Difference between selling overhead and distribution overhead: Selling overhead and distribution overhead differ in their nature and purpose. Selling overheads are incurred for promoting sales and securing orders while distribution overheads are mainly incurred

in moving the goods from the company's godown to customers' place. The object of selling overhead is to solicit orders and to make efforts to find and retain customers. The object of distribution overhead is the safe delivery of the goods to the customers.

Special Features

Selling distribution overhead costs have certain peculiar features which have a bearing on the accounting and control of these costs. These features are:

- (a) Unlike production costs, most of the selling and distribution costs cannot be identified with the units of products.
- (b) Selling costs are incurred as a matter of policy of management.
- (c) Selling costs are not always related to the volume of sales.
- (d) The characteristics and attitude of the customers also affect the selling costs.
- (e) The same product may be sold in near or distant market. This will affect cost of packing and transportation.
- (f) Selling costs vary widely depending upon the degree of competition.

Accounting Treatment

The accounting procedure of selling and distribution cost is comprised of

1. Classification, collection and analysis of these expenses.
2. Apportionment and allocation to cost centres.
3. Absorption by products or product groups.

These three stages are discussed below:

1. Classification, collection and analysis: This is first step and is similar to classification and collection of production of overheads. Selling and distribution overheads may be classified on the basis of products, sales territories, channels of distribution, salesmen etc.

When classification of expenses is complete, expenses are collected under standing order numbers provided for this purpose.

2. Apportionment and allocation to cost centres: In this step, selling and distribution overheads are allocated or apportioned to various products, sales territories or other cost centres. Selling of the common basis used for distribution of selling and distribution overheads are:

	Expenses	Basis for distribution
1.	Remuneration of salesmen	Direct allocation
2.	Advertising	Direct allocation or value of sales or space used
3.	Catalogues	Direct allocation or space used
4.	Showroom expenses	Direct allocation or space used
5.	Packing	Direct allocation
6.	Collection of overdue accounts	No. of orders or sales value
7.	Insurance	Value of stocks
8.	Transport-outside carrier	Direct allocation

9.	Own transport	Drive allocation or Weight of product carried
10.	Warehousing	Cubic ft. of product stores X times (days)

3. Absorption of selling and distribution overhead:

Absorption of selling and distribution overheads means charging of these overheads to various product jobs or orders. Various methods for absorption of selling and distribution overhead are as follows:

1. A rate per unit: This method is employed when the company is selling one uniform type of product. The total selling and distribution overheads to be absorbed are divided by the number of units sold to arrive at a rate per unit.

For example, a company is manufacturing only type of TV picture tube. During the month of May, its selling and distribution overhead amounted to Rs. 75,000 and during this period, the number of picture tubes sold is 1,000 the rate per unit for the absorption of selling and distribution overhead will be Rs. 75,000 ÷ 1,000 = Rs. 75.

2. A percentage of selling price: This method is recommended when the concern is selling more than one type of product. A percentage of selling and distribution overheads of selling price is ascertained from an analysis of past records. Overhead rate is calculated by the following formula:

$$\text{Overhead Rate} = \frac{\text{Selling and dist. overhead}}{\text{Sales}} \times 100$$

Example: Selling and distribution overhead = Rs. 5,000

Total Sales = Rs. 1,00,000

$$\text{Overhead Rate} = \frac{5000}{1,00,000} \times 100$$

= 5% of selling price

3. A percentage of works cost: In this method, a percentage of selling overheads to works cost is ascertained. This percentage rate is applied for the absorption of selling and distribution overheads.

Overhead rate is calculated as follows:

$$\text{Overhead Rate} = \frac{\text{Selling and Dist. overhead}}{\text{Total works cost}} \times 100$$

Selling and distribution overhead = Rs. 5,000

Total works cost = Rs. 40,000

$$\text{Overhead Rate} = \frac{5,000}{40,000} \times 100 = 12.5\%$$

Illustration 7: The works cost of certain article is Rs. 400 and the selling price is Rs. 800. The following direct selling and distribution expenses were incurred:

	Rs.
Freight and Carriage	40
Insurance	10
Commission	60
Packing Cases	10

The estimated fixed selling and distribution expenses for the year were Rs. 30,000 and the estimated value of sales for the year was Rs. 1,50,000.

You are required to set out the final cost of the article using the method of percentage of sales to recoup fixed selling and distribution expenses.

Solution: The percentage of fixed selling and distribution expenses to the estimated value of sales is-

$$\frac{30,000}{1,50,000} \times 100 = 20\%$$

FINAL COST OF THE ARTICLE

	Rs.	Rs.
Work cost		400
Selling and Distribution Expenses:		
Variable: Freight and Carriage	40	
Insurance	10	
Commission	60	
Packing Cases	10	
	120	
Fixed 20% of selling price	160	
Total cost		680
Profit		120
Selling Price		800

Illustration 8: A company is producing three types of products A, B and C. The sales territory of the company is divided into three areas X, Y, Z. The estimated sales for the year 2005 are as under:

The budgeted advertising cost is as under-

	X (Rs.)	Y (Rs.)	Z (Rs.)	Total

Local Cost	3,200	4,500	4,200	11,900
General	-	-	-	5,800

You are required to find the percentage of advertising cost on sales for each area and product showing how you will present the statement to management.

Solution: Apportionment and allocation of advertising cost area-wise

Item	Total (Rs.)	Area		
		X (Rs.)	Y (Rs.)	Z (Rs.)
Local cost	11,900	3,200	4,500	4,200
General cost (2% on estimated sales)	5,800	1,600	1,800	2,400
Total cost	17,700	4,800	6,300	6,600
Sales	2,90,000	80,000	90,000	1,20,000
Advertising cost as a percentage of sales	-	6%	7%	5.5%

APPORTIONMENT OF ADVERTISEMENT COST PRODUCT-WISE

Area X (@ 6% of sales)	4,800	3,000	1,800	-
Area Y (@ 7% of sales)	6,300	1,400	-	4,900
Area Z (@ 5.5% of sales)	6,600	-	4,400	2,200
Total costs	17,700	4,400	6,200	7,100
Sales	2,90,000	70,000	1,10,000	1,10,000
Advertising cost as a percentage of sales	-	6.34%	5.64%	6.45%

18.14 SUMMARY

Overheads constitute one of the important elements of cost of production. Overheads may be classified according to functions element and behaviour. In allocation of overheads, the entire amount is charged to a department. In case of apportionment of overhead only a proportionate amount is charged to a department. Though different basis are available for apportionment, it is essential to satisfy that the overhead is closely related to the basis selected. Absorption of factory overhead refers to charging of the factory overheads of a particular production department to various products manufactured or jobs completed or orders executed in that department. There are broadly two methods for absorption of factory overheads. The accounting procedure of selling and distribution cost consists of (a) classification, collection and analysis of expenses (b) apportionment and allocation to cost centres and (c) absorption by products or product groups.

18.15 KEYWORDS

Overhead: Overhead is the aggregate of indirect material cost, indirect labour cost and indirect expenses.

Allocation of overheads: It refers to identifying an item of overhead and the allotment of whole amount to one department or cost centre.

Apportionment of overheads: The process of charging proportionate amount of overheads to various department is known as apportionment of overheads.

Absorption of overheads: The process of charging the overheads from cost centre to cost units is known as absorption of overheads.

Machine hour rate: It refers to the overheads incurred for running a machine for one hour.

18.16 SELF ASSESSMENT QUESTIONS

1. What is meant by overhead expenses? Describe the steps that are necessary for the computation of the direct labour hour rate. In what respect is the direct labour hour rate method of absorbing overhead different from the percentage of direct wages method?
2. What are the requisites of a good method of absorption of factory overhead?
3. Describe the different bases on which factory expenses can be apportioned. Describe the merits and suitability of each of them.
4. Write a detailed critical note on the direct labour cost method of absorption of factory overheads.
5. What information is necessary to calculate a machine hour rate for overhead absorption? State the conditions in which the method is most effective.
6. Discuss the importance of machine hours as a basis for the absorption of factory overheads.
7. What do you understand by classification, allocation and apportionment in relation to overhead expenses? Explain fully.
8. What is meant by absorption of overhead? Discuss briefly the different methods for absorption of factory overheads?
9. Why do you consider departmentalisation of overheads necessary?

10. Discuss the methods of absorption of selling and distribution overheads.
11. How do you deal with the following in cost accounts:
- (a) Advertising
 - (b) Research and development cost
 - (c) Bad debts
 - (d) Rent of factory buildings

12. The budget of a machine shop for 2004-05 is as follows:

Normal working week	42 hours
Number of machines	15
Hours spent on maintenance in a week (Normal loss)	5 hours per machine
Estimated annual overhead	Rs. 5,55,000
Estimated direct wages rate	Rs. 3 per machine hour
Number of working weeks in 1984-85	50

The actuals in respect of a 4 week period in 2004-05 are:

Overhead incurred	Rs. 49,000
Wages paid	Rs. 7,500
Machine hours operated	2,400

Calculate (i) the overhead rate per machine hour for 2004-05 and (ii) the amount of under or over-absorption of overhead and wages in respect of the 4 week period.

13. The following particulars relate to an electrical appliances machine:
- (a) The original cost of the machine used (purchased in June 1982) was Rs. 10,000. Its estimated life is 10 years, the estimated scrap value at the end of its life is Rs. 1000,

and the estimated working time per year (50 weeks of 44 hours) is 2,200 hours of which machine maintenances etc., is estimated to take-up 200 hours.

No other loss of working time is expected, setting up time estimated at 5% of total productive time is regarded as unproductive time. (Bank holidays are to be ignored).

(b) Electricity used by the machine during production is 10 units per hour at a cost of 10 p. per unit. No current is taken during maintenance or setting up.

(c) The machine requires chemical solution which is replaced at the end of each week at a cost of Rs. 20 each time.

(d) The estimated cost of maintenance per year is Rs. 1,200.

(e) Two attendants control the operation of the machine together with five other identical machines. Their combined weekly wages, insurance and the employer's contributions to holiday pay amount to Rs. 120.

(f) Departmental and general works overheads allocated to this machine for the year 1982-83 amount to Rs. 2,000.

You are required to calculate the machine hour rate necessary to provide for recoupment of the cost of operating the machine.

14. What is machine hour rate? Calculate the machine hour rate for machine A from the following data:

Cost of machine	Rs. 16,000
Estimated scrap value	Rs. 1,000
Effective working life	10,000 hours
Running time for every 4-weekly period	160 hours

Average cost of repairs and maintenances	
Changed per four-week period	Rs. 40
Power used by machine	4 units per hour at a cost of 5 paise per hour

18.17 SUGGESTED READINGS

1. Cost Accounting by Jawahar Lal.
2. Cost Accounting by V.S.P. Rao.
3. Cost Accounting by Ravi M. Kishore.
4. Cost Accounting by Khanal Jain.

Subject : Accounting for Managers

Code : CP-104

Updated by: Dr. M.C. Garg

Lesson : 19

JOB AND PROCESS COSTING

STRUCTURE

- 19.0 Objective
- 19.1 Introduction
- 19.2 Objectives of Job Costing
- 19.3 Advantages of Job Costing
- 19.4 Limitation of Job Costing
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- 19.13 Process Losses and Wastages
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- 19.16 Accounting for Joint Products
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19.0 OBJECTIVE

After reading this lesson, you should be able to

- (a) Explain the objectives, advantages and limitations of job costing.
- (b) Discuss the procedure adopted for costing purposes in a firm using job costing.

- (c) Explain the features, advantages and limitations of process costing.
- (d) Describe the costing procedure of process costing.
- (e) Discuss the accounting for joint products and by products.

19.1 INTRODUCTION

All types of manufacturing concerns can broadly be classified into two categories : (a) Mass production concerns and (b) Special order concerns. In mass production, firms manufacture uniform types of products. Since production is of standard products, it is on a mass scale and on a continuous basis. No customer orders or specifications are required for production. Examples of mass production concerns are textile mills, chemical plants, paper manufacturing, tyre rubber companies etc. On the other hand, special order concerns manufacture products in clearly distinguishable lots in accordance with special orders and individual specifications. Examples of specific order concerns are printing press, construction of buildings, bridges, roads, ship building etc.

In case of mass production concerns the products when produced are of the same type, and involve the same material and labour and pass through the same set of processes. In such industries each process is designated as a separate cost centre and the cost per unit is calculated by dividing the total cost of the process with the total number of units produced by the process. The cost of production of the product is obtained by adding the unit costs of various processes through which the product has passed. This method of costing is known as process costing.

Job costing or job order costing also called specific order costing is a method of costing which is used when work is undertaken as per the customer's special requirement (tailor-made). It is distinct from contract costing in the sense that each job is of a comparatively short

duration. The job may be carried out within the factory/workshop or on the premises of the customer, depending on the nature of job.

The main features of job order costing are that in this method of cost ascertainment, costs of materials, labour and overhead are accumulated for each job and profit or loss on it is determined. When an enquiry is received from the customer, costs expected to be incurred on the job are estimated, and on the basis of this estimate, a price is quoted to the customer. When the job has been completed, the actual costs can be compared with the estimated costs (or standard costs if a system of standard costing is in vogue). This serves as a tool of cost control.

Job costing is employed in the following cases :

1. Where the production is against the order of the customer or jobs are executed for different customers according to their specifications.
2. Where each job needs special treatment and no two orders are necessarily alike.
3. Where there is no uniformity in the flow of production from one department to another.
4. Where the work-in-progress differs from period to period on the basis of the number of jobs in hand.

Job costing is applicable to printing, furniture, hardware, ship-building, heavy machinery, foundry, general engineering works, machine tools, interior decoration, repairs and other similar work.

19.2 OBJECTIVES OF JOB COSTING

Job costing serves the following objectives :

1. It helps in finding out the cost of production of every order and thus helps in ascertaining profit or loss made out on its execution. The management can judge the profitability of each job and decide its future course of action.
2. It helps management in making more accurate estimates about the costs of similar jobs to be executed in future on the basis of past records. The management can conveniently and accurately determine and quote prices for orders of a similar nature which are in prospect.
3. It enables management to control operational inefficiency by comparing actual costs with the estimated ones.

19.3 ADVANTAGES OF JOB COSTING

The following are the advantages of job costing :

1. It helps in identifying profitable and unprofitable jobs.
2. It helps in the preparation of estimates will submitting quotations for similar jobs.
3. Cost data under job costing enable management in preparing budgets for future.
4. It enables management to control operational efficiency by comparing actual costs with estimated ones.
5. Spoilage and defective work can be identified with a specific job and responsibility for the same can be fixed on individuals easily.

19.4 LIMITATIONS OF JOB COSTING

Job costing suffers from the following limitations :

1. It involves too much of clerical work (in estimating cost of material, labour and overheads chargeable to each job). As such it is expensive and laborious.

2. Being historical in nature, it has all the disadvantages of the historical costing. Hence, it cannot be used as a means of cost control unless it is used with techniques like standard costing.

19.5 JOB COSTING PROCEDURE

The following is the procedure adopted for costing purposes in a concern using job costing :

1. **Job Number** : When an order has been accepted, an individual work order number must be assigned to each such job so that separate orders are capable of being identified at all stages of production. Assignment of job numbers also facilitates reference for costing purposes in the ledger and is conveniently short for use on various forms and documents.
2. **Production order** : The Production Control Department then makes out a production order thereby authorising to start work on the job. Several copies of production order are prepared, the copies often being in different colours to distinguish them more easily. These copies are passed on to the following :
 - (i) All departmental foremen concerned with the job ;
 - (ii) Storekeeper for issuance of materials; and
 - (iii) Tool room-an advance notification of tools required.

Exhibit I shows a proforma of production order.

EXHIBIT-I

Production Order			
Name of Customer.....		Job No.....	
Date of Commencement		Date	
Date of Completion		Bill of Material No.....	
Special instructions.....		Drawing attached Yes/No	
<i>Quantity</i>	<i>Description</i>	<i>Machines to be used</i>	<i>Tools required</i>
(Sign)			
Production Authorised by : Head of Production Control Deptt.			

The columns provided in the production order differ widely, depending largely upon the nature of production.

3. **Job Cost Sheet** : Job cost sheet is the most important document used in the job costing system. A separate cost sheet or card is maintained for each job in which all expenses regarding materials, labour and overheads are recorded directly from costing records. Job cost sheets are not prepared for specific periods but they are made out for each job regardless of the time taken for its completion. However, material, labour and overhead costs are posted periodically to the relevant cost sheet.

EXHIBIT-II

Job Cost Sheet												
Customer.....						Job No.....						
Date of Commencement.....						Date of completion.....						
Material Cost			Labour Cost				Factory Overhead (Absorbed)					
Date	Material Req. No.	Amount Rs.	Date	Hours	Rate Rs.	Amt. Rs.	Dept.	Hours	Rate Rs.	Amt. Rs.		
Total			Total				Total					
Profit/Loss			Cost Summary									
Price Quoted	Rs.	.....	Material									Rs.
Less : Cost		.....	Labour									
		_____	Factory Overhead									
			Administrator Overhead									
Profit or Loss		.....	Selling Overhead									
		_____	Total cost									

A proforma Job Cost Sheet is shown at Exhibit-II

The material, labour and overhead to be absorbed into jobs are collected and recorded in the following way :

(a) Direct Materials : The method of recording receipts and issues of materials on material requisitions or bill of materials show the quantities of materials issued to jobs from store. When copies of these documents reach the cost office, they are priced and entered in the stores ledger

account in the 'Issues' column. Each requisition shows the job number to which the material is to be charged. Summaries of material requisitions are prepared at regular intervals on Materials Abstract or Materials Issue Analysis Sheet. These summaries facilitate debiting the job with total cost of materials rather than charging with many small items. These totals are also used for entries in stores ledger control account and work-in-progress control account.

(b) **Direct Wages :** These wages payable to workers are calculated on clock cards, job cards, time sheets etc. The summaries of job cards are made on Wages Abstract or Wages Analysis Sheets, which shows the direct wages chargeable to each job. The total of wages chargeable to various jobs is debited to work-in-progress control account.

(c) **Direct expenses :** Direct expenses which can be identified with specific jobs are directly charged to these jobs, the total being debited to work-in-progress control account.

(d) **Overheads :** Indirect materials, indirect wages and indirect expenses which cannot be identified with specific jobs are apportioned to cost centres. Absorption of overhead by the jobs passing through the cost centres is based upon percentage of direct wages or direct material cost, direct labour hours machine hours, etc.

4. **Completion Report :** A completion report is sent to the costing department after the completion of a job. The actual cost recorded in the job cost sheet is compared with the estimated cost. It will reveal the efficiency or inefficiency in operation. It is a guide to the future course of action.

5. **Profit or Loss :** Profit or loss on each job can be determined by comparing the actual cost with the price obtained.

Illustration 1 : The following given below has been taken from the cost records of an engineering works in respect of the Job No. 888.

Material: Rs. 4010

Wages : Department A-60 hours @ Rs. 3 per hour
 Department B-40 hours @ Rs. 2 per hour
 Department C-20 hours @ Rs. 5 per hour
 The overhead expenses are as follows :

Variable: Department A-Rs. 5000 for 5000 hours
 Department B-Rs. 3000 for 1500 hours
 Department C - Rs. 2000 for 500 hours

Fixed expenses Rs. 20,000 for 10,000 working hours.

Calculate the cost of the Job no. 888 and the price for the job to give a profit of 25 per cent on the selling price.

Solution :

Job Cost Sheet (Job No. 333)

Particulars	Rs.	Rs.
Materials		4,010
Wages :Dept. A (60×Rs. 3)	180	
Dept. B(40×Rs. 2)	80	
Dept. C(20×Rs. 5)	100	360
Overhead expenses :		
Variable :		
Deptt. A @ = $\frac{5000}{5000} = \text{Rs. } 1 \times 60 = 60$		
Dept. B@ = $\frac{3000}{1500} = \text{Rs. } 2 \times 40 = 80$		
Dept. C @ = $\frac{2000}{500} = \text{Rs. } 4 \times 20 = 80$		220
Fixed expenses :		
$\frac{20,000}{10,000} = 2 \times (60 + 40 + 20)$		240
Cost of the job		4,830
Add : Profit 25% on selling price		1,610
Selling Price		6,440

19.6 WORK-IN-PROGRESS IN JOB COSTING

The cost of an incomplete job, that is, a job on which some manufacturing operation is still due is termed work-in-progress. If a production order has not been duly completed by the end of an accounting period, it is essential that the closing stock of the work-in-progress be determined. Unless this is correctly done, the profits for the period will be distorted. Determination of work-in-progress is frequently essential where periodic Profit and Loss Account is required to be prepared for control purposes without reference to the closure of the accounting period.

The account in respect of such jobs may be maintained in the following ways :

1. A composite work-in-progress account for the entire factory.
2. A composite work-in-progress account for every department. For example, if the factory has three departments A, B and C, a work-in-progress for each of these three departments will be opened.

The work-in-progress account is periodically debited with all costs direct and indirect incurred in execution of the jobs. At intervals of month or so a summary of completed jobs is prepared and the work-in-progress account is credited with the cost of completed jobs. In case work-in-progress account for each department of the factory has been opened, it will be necessary to find out the cost of completed jobs regarding each department. The balance in work-in-progress account at any time represents the cost of jobs not yet completed.

Illustration 2 :

The following information for the last year is obtained from the books and records of a factory :

	<i>Completed jobs</i>	<i>Work-in-progress</i>
	<i>Rs.</i>	<i>Rs.</i>
Raw materials supplied from stores	9,00,000	3,00,000
Wages	10,00,000	4,00,000
Chargeable expenses	1,00,000	40,000
Materials returned to stores Rs. 10,000		

Factory overheads are 80% of wages and office and selling overheads 25% of the factory cost.

The sales value of completed jobs during the year is Rs. 41,00,000.

You are required to prepare :

- (i) A consolidated work-in-progress account, and
- (ii) A cost of sales account showing profit made or loss incurred on the completed jobs.

Solution :

Consolidated work-in-progress account

Particulars	Rs.	Particulars	Rs.
To Stores (Raw materials supplied)	12,00,000	By Stores (Materials returned)	10,000
To Wages	14,00,000	By Cost of sales-jobs completed (1)	28,00,000
To Chargeable expense	1,40,000		
To Factory overheads (80% of wages)	11,20,000	By Balance c/d	10,50,000
	38,60,000		38,60,000

Cost of Sales account

Particulars	Rs.	Particulars	Rs.
To work-in-progress (completed jobs)	28,00,000	By Sales	41,00,000
To Office and selling overheads (25% of factory cost)	7,00,000		
To Profit	6,00,000		
	<u>41,00,000</u>		<u>41,00,000</u>

Working note :

1. Factory cost of completed jobs :

	Rs.
Raw materials	9,00,000
Wages	10,00,000
Chargeable expenses	1,00,000
Factory overheads (80% of wages)	8,00,000
	<u>28,00,000</u>

19.7 FEATURES OF PROCESS COSTING

Process Costing is a method of costing used to ascertain the cost of a product at each process or stage of manufacture. In this method, the costs of materials, wages and overheads are accumulated for each process separately, for a given period, and then carried forward cumulatively from one process to the next process till the last process is completed. Records are also maintained to account for process losses. These losses may be normal or abnormal. Separate accounting is done for normal and abnormal losses, opening and closing work-in-progress and inter-process profits, if any. This method of costing is used in those industries where mass production of identical units is undertaken on a

continuous basis and finished products are subjected to a number of production stages called processes before completion.

The system of process costing is suitable for industries involving continuous production of the same product or products through the same process or set of processes. It is in use in plant producing paper, rubber products, medicines, chemical products. It is also very much common in flour mill, bottling companies, canning plants, breweries etc.

Process costing is that aspect of operation costing which is used to ascertain the cost of the product at each process or stage of manufacture, where processes are carried on having one or more of the following features:

- (i) Production is done having a continuous flow of identical products except where plant and machinery is shut down for repairs, etc.
- (ii) Clearly defined process cost centres and the accumulation of all costs (materials, labour and overheads) by the cost centres.
- (iii) The maintenance of accurate records of units and part units produced and cost incurred by each process.
- (iv) The finished product of one process becomes the raw material of the next process or operation and so on until the final product is obtained.
- (v) Avoidable and unavoidable losses usually arise at different stages of manufacture for various reasons. Treatment of normal and abnormal losses or gains is to be studied in this method of costing.
- (vi) Sometimes goods are transferred from one process to another process not at cost price but at transfer price just to compare this with the market price and to have a check on the inefficiency and losses occurring in a particular process. Elimination of profit element from stock is to be learnt in this method of costing.
- (vii) In order to obtain accurate average costs, it is necessary to measure the production at various stages of manufacture as all the input units may not be converted into finished goods; some may be in progress. Calculation of effective units is to be learnt in this method of costing.

- (viii) Different products with or without by-products are simultaneously produced at one or more stages or processes of manufacture. The valuation of by-products and apportionment of joint cost before point of separation is an important aspect of this method of costing. In certain industries, by-products may require further processing before they can be sold. A main product of one firm may be a by-product of another firm and in certain circumstances, it may be available in the market at prices which are lower than the cost to the first mentioned firm. It is essential, therefore, that this cost be known so that advantages can be taken of these market conditions.
- (ix) Output is uniform and all units are exactly identical during one or more processes. So the cost per unit of production can be ascertained only by averaging the expenditure incurred during a particular period.

19.8 DIFFERENCE BETWEEN PROCESS COSTING AND JOB COSTING

Process costing and job costing differ on the following counts:

1. *Applicability.* Job costing is applicable in situations where the objective is to identify costs with specific products or jobs. Process costing, on the other hand, is used in case of mass production of similar units that continuously pass through different departments or processes.
2. *Cost Collection :* In job costing, manufacturing costs are accumulated for particular jobs or batches of product using job cost sheets. In process costing, manufacturing costs are accumulated for entire departments or processes and the cost of particular jobs or batches or products is not determinable.
3. *Time period assumption :* In job costing, costs are accumulated for a specific product or job without taking into account the production time which may be more than one accounting period. In process costing, costs are accumulated for specific departments/processes for a given time period (say a month). That is, production is measured for specific time periods in process costing.

4. *Purpose* : In job costing production is generally dependent on customers' orders and specifications. Under process costing, production is done for storing stock of goods and for future sale.
5. *Computation of unit costs* : In job costing unit cost is obtained by dividing the cost of the job order by units produced in the job order. Under process costing, unit costs are obtained by dividing departmental/process costs by process production.
6. *Work-in-progress* : In job costing, one work-in-progress account is maintained. But in process costing, individual work-in-progress accounts are prepared for each production/process department to ascertain manufacturing costs by process.

19.9 TYPES OF PROCESSING

As stated above, process costing is used in case of industries, which involve processing of a product through different stages. The various types of processing are as follows :

- (i) **Continuous sequential processing** : In case of this processing a product has to pass through different cost centres or stages of manufacturing continuously and in succession one after the other during a period. The processing being continuous and identical, the costing units for each centre or stage are identical during any period. Examples of this type of processing are cement-making, paper-making, refining of crude petroleum, etc.
- (ii) **Discontinuous Processing** : In case of this processing, a process is independently operated for the individual product as such at frequent intervals. The costing unit in case of this processing, dependent upon the product may vary even for the same cost centre. Examples of this type of processing are dye manufacturing, fruit preservation, vegetable canning, yarn spinning, etc.

(iii) **Parallel Processing** : In case parallel processing, the operations or stages through which the product has to pass run parallel and separately. All these parallel processes ultimately join with the end process. Examples of this type of processing are manufacturing different components which ultimately join in the assembly process to make a product, meat packing etc.

(iv) **Selective Processing** : In case of this processing, the combination of the processes or stages of operation depend upon the end-product to be commercialised. Examples of this type of processing are cooked meat, chloride compounds like bleaching power of zinc chloride or hydrochloric acid, etc.

19.10 ADVANTAGES OF PROCESS COSTING

The advantages of process costing can be summarised as follows:

1. The cost of different processes as well as finished product can be computed conveniently at short intervals, say, daily or weekly.
2. Control cost and production can be advantageously effected as pre-determined and actual data are available for each department or process.
3. It involves less clerical work because of the simplicity of cost records.
4. The average costs of homogeneous products can easily be computed.
5. Expenses can be allocated to different processes on rational basis and accurate cost, thus, can be ascertained.
6. It enables the correct valuation of closing inventories.

19.11 DISADVANTAGES OF PROCESS COSTING

1. The cost ascertained at the end of the process is called historical cost which is of very small use for managerial control. Since it is based on historical costs, it has all the weaknesses of historical costing.

2. The system of costing conceals weaknesses and inefficiencies in processing.
3. It does not evaluate the efforts of individual workers or supervisors.
4. The valuation of work-in-progress on the basis of degree of completion is merely a guess work.
5. If production is not homogeneous, as in the case of foundries making castings of different sizes and shapes, the average cost may give an incorrect picture of cost.

19.12 COSTING PROCEDURE

The factory or concern is divided into distinct processes or operations and a separate account is opened for each process (cost centre). The account is debited with the value of material, labour and overheads relating to the process. The value of by products and scrap, if any, is credited to the account and the balance of this account, representing the cost of partially worked out product, is passed on to the next process becomes the raw material of the next process. In some industries, depending upon the plant arrangement, the partially worked out product of a process may be transferred to a process stock account from which it may be issued to the next process as and when required. The finished out of the last process (i.e. finished product) is transferred to the Finished Goods Account. All expenditure of materials, labour, direct expenses and overheads are charged to the process concerned. In brief :

- (i) **Materials :** Materials required for each process are drawn from store against Materials Requisitions or Bill of Materials and debited to cost. When the materials are issued in bulk, the person-incharge of the department has to keep the account of materials consumed. When the finished product of one process becomes the raw material of the next process, the account of the receiving process should be debited with the cost of transfer, in addition to the cost of additional materials, if any.

(ii) **Labour** : Wages paid to labourers and workmen who are engaged in particular processes are directly allocated to the process. If workers are engaged in a number of processes, the wages paid may be apportioned on the basis of time-booking.

(iii) **Direct Expense** : Direct expenses such as depreciation, insurance, electricity, repairs, etc. are directly allocated to the respective accounts.

(iv) **Overheads** : Rent, telephone, lighting, gas, water, etc. which are some common expenses of one or more processes, may be apportioned to the various processes on suitable basis. Generally, these overheads are recovered at predetermined rates or based on direct wages or prime cost.

From the cost accounting point of view, there could be processes which may or may not have process losses. Similarly, in respect of each process, there may or may not be work-in-progress at the beginning or at the end.

Illustration 3 : A company produces two products - P and R. They undergo two processes, namely Factory and Finishing. Raw materials used in the factory and general expenses incurred are apportioned in the ratio of output of each class. The output for the year ended 2001 was : P-6,000 and R-2,000. Other charges for each process are apportioned in the ratio of finishing wages.

From the following particulars, prepare a statement of costs per unit of each product in each process showing the cost of production and profit per unit. The selling prices are - P Rs. 100 and R Rs. 120.

	Factory (Rs.)	Finishing (Rs.)
Opening stock of raw materials	92,000	18,000
Purchases of raw materials	2,67,750	84,250
Closing stock of raw materials	1,23,750	19,750
Wages : P	1,06,500	37,500
R	32,500	25,000
Expenses	93,125	41,250
General expenses amounted to Rs. 48,000 in all.		

Solution :**Statement of Costs**

Particulars	Total Rs.	P(6,000 units)		R (2,000 units)	
		Total Rs.	Per unit Rs.	Total Rs.	Per Unit Rs.
Factory Process					
Raw materials consumed (3:1)	2,36,000	1,77,000	29.50	59,000	29.50
Wages (Actual)	1,44,000	1,06,500	17.75	37,500	18.75
Factory expenses (3:2)	93,125	55,875	9.31	37,250	18.62
Cost of factory process	4,73,125	3,39,375	56.56	1,33,750	66.87
Finishing Process					
Raw materials consumed (3:2)	82,500	49,500	8.25	33,000	16.50
Wages (Actual)	62,500	37,500	6.25	25,000	12.50
Finishing expenses (3:2)	41,250	24,750	4.12	16,500	8.25
Cost of finishing process	6,59,375	4,51,125	75.18	2,08,250	104.12
General expenses (3:1)	48,000	36,000	6.00	12,000	6.00
Total cost	7,07,375	4,87,125	81.18	2,20,250	110.12
Profit	1,32,680	1,12,920	18.82	19,760	9.88
Selling price	8,40,055	6,00,045	100.00	2,40,010	120.00

19.13 PROCESS LOSSES AND WASTAGES

When materials are processed, they lose or gain in volume or weight as a result of the process. It is common that process loss or scrap or wastage occur in process industries. These process losses may be of two types, viz. controllable and uncontrollable.

(a) **Normal or uncontrollable loss :** Because of the nature of the raw materials, some loss is inherent and is unavoidable. This is known as normal waste or normal loss. And this type of loss is expected in normal condition for example, stamping process, evaporation, etc. The percentage of such losses is anticipated from past experience by the management. Loss of this type should be absorbed by good units produced, i.e. the cost of units lost is charged to the good units output. Any value realisable on the normal loss will be credited to the process account.

Illustration 4 : (Normal loss without scrap value)

The cost of production of 40 units consisting of materials Rs. 1,500; Labour Rs. 1,300 and Overhead Rs. 164. The normal waste is 5% of input. Prepare the Process Account.

Solution :

Process Account

Particulars	Units	Amount Rs.	Particulars	Units	Amount Rs.
To Materials	40	1,500	By Normal Loss	2	–
To Labour	–	1,300	By Final Product @ Rs. 78	38	2,964
To Overheads	–	164			
	40	2,964		40	2,964

Note : The normal wastage reduces the quantity of output. But the cost of normal loss, regarded as part of the cost of production process, in which it occurs. The amount of loss is borne in the production cost of good units. The cost per unit of output goes up to that extent. The quantity of normal wastage is recorded in the Quantity Column and Nil figure is shown in the amount column.

$$\text{Per Rate} = \frac{\text{Rs. 2,964}}{(40-2)} = \text{Rs. 78}$$

$$\text{(or) Rs. 78} \times 38 = \text{Rs. 2,964}$$

(b) **Abnormal Loss or Controllable Loss :** In certain cases, it can be seen that the loss exceeds the predetermined normal loss. Any loss exceeding the normal loss is called abnormal loss. Abnormal loss should not affect the normal cost of production. It is caused by accidents, sub-standard materials, carelessness etc. Therefore, abnormal loss is valued just like good units and transferred to a separate account called Abnormal Loss Account.

$$\begin{aligned} &\text{Value of Abnormal loss} \\ &= \frac{\text{Normal cost of normal production}}{\text{Normal output}} \times \text{Units of abnormal loss} \end{aligned}$$

The loss on account of abnormal loss or wastage is not borne by production, but by Profit and Loss Account. Abnormal Wastage Account is debited and Process Account is credited with the cost of abnormal wastage. If the wastage is sold in the market, Abnormal Wastage Account is credited with the realised price and the balance is transferred to Profit and Loss Account.

Illustration 5 : (Normal loss and abnormal loss with scrap value)

In Process A, 100 units of raw materials were introduced at a cost of Rs. 1,000. The other expenditure incurred by the process is Rs.

600. Of the units introduced, 10% are normally scrapped in the course of manufacture and they possess a scrap value of Rs. 7 per unit. The output of Process A was only 75 units. Calculate the value of abnormal loss.

Solution :

Process Account

Particulars	Units	Amount Rs.	Particulars	Units	Amount Rs.
To Materials	100	1,000	By Normal Loss	10	70
To Other Expenses		600	By Abnormal Loss	15	255
		–	By Process B A/c @ Rs. 17	75	1,275
	100	1,600		100	1,600

$$\text{Value of abnormal wastage} = \frac{\text{Normal cost of normal output}}{\text{Normal output}} \times \text{Abnormal Loss}$$

$$\text{Normal Cost} = \text{Rs. } 1,600 - \text{Rs. } 70 = \text{Rs. } 1,530$$

$$\text{Amount of abnormal units} = \frac{\text{Rs. } 1,530}{90} \times 15 = \text{Rs. } 255$$

$$\text{Amount of good units} = \frac{\text{Rs. } 1,530}{90} \times 75 = \text{Rs. } 1,275$$

The unit rate of abnormal loss and the unit rate of good units are the same, i.e. Rs. 17

Note : Abnormal losses are valued as good units. The unit cost which is used to value good units is also applied for valuation of abnormal loss units. The cost of abnormal loss units computed in this manner is

transferred to a separate Account, called, Abnormal Loss Account and credited to the relevant Process Account.

(c) Abnormal Gain or Effectiveness

Sometimes, the actual loss in a process may be smaller than what so expected on the basis of experience. This represents an exceptional or abnormal gain over what is normally anticipated. The value of abnormal gain is calculated in the same manner as that of abnormal loss and is credited to Abnormal Gain Account. The amount of scrap which would otherwise have been realised, had there been normal loss and no abnormal gain, is debited to the Abnormal Gain Account and the balance is credited to Costing Profit and Loss Account.

Value of abnormal gain is calculated with the following formula :

$$= \frac{\text{Cost of Normal Output}}{\text{Normal Output}} \times \text{Abnormal Gain (units)}$$

$$= \frac{\text{Total Process Cost - Reliable Value of Normal Wastage}}{\text{Input (units) - Normal Wastae (units)}} \times \text{Abnormal Gain (units)}$$

Illustration 6 :

In process A, 1000 units of raw materials were introduced at a cost of Rs. 15,000. Direct wages amounted to Rs. 7,500 and manufacturing overheads to Rs. 5,000. 10% of the units introduced are normally lost in the course of manufacture and these are sold @ Rs. 5 per unit. The actual output of the process was 940 units.

Prepare Process A Account and Abnormal Gain Account.

Solution :

Process A Account

Particulars	Units	Amount Rs.	Particulars	Units	Amount Rs.
To Materials	100	15,000	By Normal loss (10%)	100	500
To Direct wages	–	7,500	By Finished Stock A/c	940	28,200
To Manufacturing overheads		5,000			
To Abnormal Gain A/c	40	1,200			
	1,040	28,700		1,040	28,700

Note : Calculation of Value of Abnormal Gain

$$\begin{aligned}
 \text{Normal Output} &= \text{Units Introduced} - \text{Normal Loss} \\
 &= 100 - 100 \\
 &= 900 \text{ units}
 \end{aligned}$$

$$\begin{aligned}
 \text{Abnormal Gain} &= 940 - 900 \\
 &= 40 \text{ units}
 \end{aligned}$$

$$\begin{aligned}
 \text{Value of Abnormal Gain} &= \frac{\text{Total Cost-Scrap Realised}}{\text{Normal Output}} \times \text{Units of Abnormal Gain} \\
 &= \frac{27,500 - 500}{900} \times 40 \\
 &= \text{Rs. } 1,200
 \end{aligned}$$

Abnormal Gain A/c

To Normal Loss (Loss of income from scrap)	40	200	By Process A A/c	40	1,200
To Cost Profit & Loss A/c		1,000			
	40	1,200		40	1,200

(d) Scrap and Defective : Scrap is the incidental residue from certain types of manufacture, usually of small amount and of low value, recoverable without further processing. Scrap may be sold or reused. The amount realised from sale of scrap is credited to the process account. Finished products that are not upto the predetermined standard, are known as defective. If the defective are sold, the amount realised is credited to process account. If the defective are sought to be rectified by spending additional material, labour etc. the extra amount spend is treated as overheads. If the defective units (normal) are discarded the cost of output is increased (as in the case of normal loss). For abnormal defective units the loss is transferred to Costing Profit and Loss Account (like abnormal loss).

19.14 INTER PROCESS PROFITS

Sometimes the output of one process is transferred to a subsequent process, not at cost, but at a price, showing a profit to the transferer process. Transfer price may be made at a price corresponding to current wholesale market price or at cost plus an agreed percentage. The objects are :

- (i) to know whether the cost of production competes with the market prices; and
- (ii) to make each process stand on its own efficiency and economies, i.e., the transferee processes are not given the benefits of economies effected in the earlier process.

This system involves a rather unnecessary complication of the accounts, as the desired comparison could be prepared on separate cost reports for each process or by adopting a standard costing system when standards could be set for each process. The complexity brought into the accounts arises from the fact that the inter-process profits so

introduced remain included in the price of process stocks, finished stocks and work-in-progress. For the balance sheet purpose, inter-process profits cannot be included in stock, as a firm cannot make a profit by trading itself. To avoid these complications a provision must be created to reduce the stock to actual cost price. This problem arises only in respect of stocks on hand at the end of the period, because goods sold will have realised the internal profits.

In order to compute the profit element in closing inventories and to obtain the net realised profit for a period, three columns have been shown on each side of process accounts and closing stock have been deducted from the debit side of the process accounts instead of showing it on the credit side. Cost of closing stock can be easily obtained if we compare the accumulated cost and total in any process. The cost of stock can be obtained by the following formula :

$$= \frac{\text{Cost}}{\text{Total}} \times \text{Closing Stock}$$

The profit on closing stock can then be easily obtained by deducting the cost of stock thus arrived at from the value of stock.

Sometimes opening stock and production overheads are given. We should add the opening stock at the beginning along with transfer cost, materials and wages. From the total of these, closing stock should be deducted to calculate prime cost. Then production overheads are added. This becomes the total cost of the process to which is added the desired percentage of profit.

Illustration 7 : A product passes through three processes before it is completed. The output of each process is charged to the next process at a price calculated to give a profit of 20% on transfer price. The output of process III is charged to Finished Stock Account on a similar basis. These

was no work-in-progress at the beginning of the year and overheads have been ignored. Stock in each process has been valued at the prime cost of the process. The following data is obtained on 31st December 2001 :

Item	Process I Rs.	Process II Rs.	Process III Rs.	Finished Stock Rs.
Direct Materials	3,000	2,000	4,000	–
Direct Wages	2,000	3,000	1,000	–
Stock on 31st December	1,000	2,000	3,000	3,000
Sales during the year	–	–	–	17,000

You are required to :

- prepare process cost accounts showing the profit element at each stage;
- show actual profit realised; and
- show stock valuation as it would appear in the Balance Sheet.

Solution :

Process I A/c

	Total Rs.	Cost Rs.	Profit Rs.		Total Rs.	Cost Rs.	Profit Rs.
To Materials	3,000	3,000	–	By Process II A/c	5,000	4,000	1,000
To Wages	2,000	2,000	–				
Total	5,000	5,000	–				
Less Closing Stock	1,000	1,000	–				
Prime cost	4,000	4,000	–				
To Gross Profit (25% on cost)	1,000	–	1,000				
	5,000	4,000	1,000				
To Opening Stock b/d	1,000	1,000	–				

Process II A/c

	Total Rs.	Cost Rs.	Profit Rs.		Total Rs.	Cost Rs.	Profit Rs.
To Process I A/c	5,000	4,000	1,000	By Process III A/c	10,000	7,200	2,800
To Materials	2,000	2,000	–				
To Wages	3,000	3,000	–				
Total	10,000	9,000	1,000				
Less Closing Stock	2,000	1,800	200				
Prime Cost	8,000	7,200	800				
Add Gross Profit (25% on cost)	2,000	–	2,000				
	10,000	7,200	2,800				
To Opening Stock b/d	2,000	1,800	200				

Process III A/c

	Total Rs.	Cost Rs.	Profit Rs.		Total Rs.	Cost Rs.	Profit Rs.
To Process II A/c	10,000	7,200	2,800	By Finished Stock A/c	15,000	9,760	5,240
To Materials	4,000	4,000	–				
To Wages	1,000	1,000	–				
Total	15,000	12,200	2,800				
Less Closing Stock	3,000	2,440	560				
Prime Cost	12,000	9,760	2,240				
Add Gross Profit (25% on cost)	3,000	–	3,000				
	15,000	9,760	5,240				
To Opening Stock b/d	3,000	2,440	560				

Finished Stock A/c

	Total Rs.	Cost Rs.	Profit Rs.		Total Rs.	Cost Rs.	Profit Rs.
To Process III A/c (transfer)	15,000	9,760	5,240	By Sales	17,000	7,808	9,192
Less Closing Stock	3,000	1,952	1,048				
	12,000	7,808	4,192				
To Gross Profit	5,000	–	5,000				
	17,000	7,808	9,192				
To Opening Stock b/d	3,000	1,952	1,048				

Notes :

(a) Calculation of unrealised profit on closing stock

For this purpose, the cost of closing stock is calculated by taking the figures in the cost and total columns for each process before deducting the closing stock by applying the following formula :

$$\text{Cost of Stock} = \frac{\text{Cost}}{\text{Total}} \times \text{Closing Stock}$$

	Cost of closing stock	Unrealised profit
Process I –	Rs. 1000 (given)	Nil
Process II = $\frac{9,000}{10,000} \times 2000 =$	Rs. 1,800	Rs.2,000-1800 = Rs.200
Process III = $\frac{12,200}{15,000} \times 3000 =$	Rs. 2,440	Rs.3000-2440 = Rs. 560
Finished Stock = $\frac{9,760}{15,000} \times 3,000 =$	Rs. 1,952	Rs. 3000-1952 =Rs. 1048

(b) Actual Profit Realised

	Apparent profit from process (Rs.)	Unrealised profit from closing stock (Rs.)	Actual profit realised (Rs.)
Process I	1,000	–	1,000
Process II	2,000	200	1,800
Process III	3,000	560	2,440
Finished Stock	5,000	1,048	3,952
	11,000	1,808	9,192

(c) Stock Valuation for Balance Sheet Purposes

	Cost of closing stock (Rs.)
Process I	1,000
Process II	1,800
Process III	2,440
Finished Stock	1,952
Total	7,192

19.15 WORK-IN-PROGRESS

The problem of ascertaining work-in-progress in process industries is very important and generally difficult. In most firms, production is on a continuous basis and so the problem of work-in-progress is quite common. This problem can be solved by calculating equivalent production (units) or equivalent completed (effective) units.

Equivalent Production : Equivalent production means converting the incomplete production into its equivalent completed units. In each process, an estimate is made of the percentage completion work-in-progress with regard to different elements of cost, viz., material, labour and overhead. It is most important that the estimate of percentage completion is as accurate as possible. The formula for computing equivalent completed units is :

$$\text{Equivalent completed units} = \frac{\text{Actual number of units in process of manufacture}}{\text{Percentage of work completed}}$$

The steps involved in the computation of equivalent production are outlined below :

- (i) Express the opening inventory of work-in-progress in equivalent completed units : This may be done by multiplying the units of opening work-in-progress by the percentage of work required to be done to complete the unfinished work of the previous period.
- (ii) Add to (i) above, the number of units completed out of the units introduced during the period.
- (iii) Then add (ii) above, the equivalent completed units of closing work-in-progress. This can be done by multiplying the units of closing work in progress by the percentage of work done on the unfinished units at the end of the period.

The equivalent units may be required to be computed in respect of each element of cost, viz., material, labour and production overhead.

The cost of units completed from the unfinished units of the previous period (opening work-in-progress) plus the units completed of the current period's input, and the units still remaining uncompleted (closing work-in-progress) should be shown separately.

Illustration 8 :

Opening stock of work-in-progress 4,000 units 40% complete.

Units put into process : 30,000

Units completed : 32,000

Closing stock of work-in-progress 2,00 units, 60% complete.

Calculate equivalent production.

Solution :

	Rs.
Opening stock-work required to be completed (4,000×60%)	2,400
<i>Add</i> : Units introduced and completed during the period (30,000-2,000)	28,000
<i>Add</i> : Closing stock (work done i.e. 60%) (2,000×60%)	1,200
Completed equivalent production	<u>31,600</u>
Alternatively	Rs.
Units completed during the year	32,000
<i>Add</i> : Closing stock (work done i.e. 60%) (2,000×60%)	1,200
	<u>33,200</u>
<i>Less</i> : Opening work-in-progress (percentage of work done in the previous period) 4,000×40%	1,600
Complete equivalent production	<u>31,600</u>
Alternatively	Rs.
Opening stock of work incomplete 4,000×60%	2,400
<i>Add</i> : Put into production	30,000
<i>Less</i> : Closing work-in-progress incomplete (2,000×40%)	800
Complete equivalent production	<u>31,600</u>

In order to understand the equivalent production clearly, illustrations on equivalent production may be divided into two groups.

- I When there is only closing work-in-progress
- II When there is opening as well closing work-in-progress.

Again, these may be further divided into two groups, i.e., (a) When there are no process losses, and (b) when there are process losses and gains.

I When There is only closing work-in-progress

(a) Without Process Losses

Under this case, the existence of process losses is ignored. Closing work-in-progress is converted into equivalent units on the basis of estimates as regards degree or completion of materials, labour and production overhead. After calculating the equivalent units, it is not difficult to evaluate closing work-in-progress.

Illustration 9 : Input 3,800 units ; closing work-in-progress 800 units and degree of completion of Material 80%, Labour and Overhead 70%. The Process Costs are : Material Rs. 7280, Labour and Overhead Rs. 17,800.

Find out Equivalent Production, Cost per unit of Equivalent Production and prepare the Process A Account assuming that there is no opening work-in-progress and process loss.

Solution :

Statement of Equivalent Production and Cost

Input		Output	Equivalent Production Units				
Item	Units	Items	Materials			Labour and Overhead	
			Units	Units	%	Units	%
Units Introduced	3,800	Units completed & transferred	3,000	3,000	100	3,000	100
		Work-in-Progress	800	640	80	560	70
	3,800		3,800	3,640		3,560	
Current Cost				7,280		17,800	Total
Cost per Equivalent Unit				Rs. 2		Rs. 5	Rs. 7

Statement of Evaluation

Finished Goods	$3,000 \times 7 =$	Rs. 21,000
Work-in-Progress		
Materials	$640 \times 2 =$	1,280
Labour and Overhead	$560 \times 5 =$	2,800
		Rs. 4,080

Process A Account

Particulars	Units	Amount Rs.	Particulars	Units	Amount Rs.
To Materials	3,800	7,280	By Finished Stock A/c	3,000	21,000
To Labour & Overhead		17,800	By Work-in-Progress	800	4,080
	3,800	25,080		3,800	25,080

b) **With Process Losses** : Generally, losses are inherent in process operations. Normal process losses are ignored in ascertaining equivalent production. But abnormal losses or gains should be treated as good units having due regard to the degree of completion. If units scrapped have any realisable value, that amount should be deducted from the cost of materials in the cost statement before dividing it by equivalent production units. As regards abnormal loss, if the degree of completion is separately given, it has to be duly considered while preparing the Equivalent Production Statement. Otherwise, it may be assumed that the rejection (in respect of units of abnormal loss) has taken place at the stage of final inspection and abnormal loss units may, therefore, be taken to be 100% complete in all respects. But in case of abnormal gain, the degree of completion should always be taken at 100% as gain is represented by good production units.

Illustration 10 :

During the month of January, 4,000 units were introduced into process A. The process costs were :

	Rs.
Materials	30,000
Direct Wages	20,700
Factory Overheads	5% of Direct Wages.

The normal loss was estimated at 10% on input. At the end of the month, 3200 units had been produced and transferred to process B. 500 units had been scrapped. The scrapped units had been completely processed and realised Rs. 5 per unit. 300 units were incomplete and the stage of completion in respect of these units was estimated to be - materials 75%, labour and overheads 50%

Find out (a) Equivalent production, (b) Cost per unit, (c) Value of output to be transferred. Also show the necessary accounts.

Solution :**Statement of Equivalent Production**

Input	Output	Units	Equivalent Production			
			Material		Labour & Overheads	
			%age comp- pletion	Units	%age comp- pletion	Units
4,000	Normal (10% of 4,000)	400	—	—	—	—
	Abnormal loss (500-400)	100	100	100	100	100
	Finished production	3,200	100	3,200	100	3,200
	Work-in-progress	300	75	225	50	150
4,000	Total	4,000		3,525		3,450

Statement of Cost

Elements of Cost	Cost	Equivalent Production (Units)	Cost per Unit
Materials	30,200		
Less Scrap value of normal loss (5×400)	<u>2,000</u>	28,200	3,525
Direct wages	20,700	3,450	6
Factory overheads (50% of direct wages)	10,350	3,450	3
Total	<u>59,250</u>		<u>17</u>

Statement of Evaluation

Finished Production

Materials	3,200 units @ Rs. 8 per unit	= 25,600
Labour	3,200 units @ Rs. 6 per unit	= 19,200
Overheads	3,200 Units @ Rs. 3 per unit	= 9,600
		<u>Rs. 54,400</u>

Work-in-progress

Materials	225 units @ Rs. 8 per unit	= 1,800
Labour	150 units @ Rs. 6 per unit	= 900
Overheads	150 units @ Rs. 3 per unit	=450
		<u>Rs. 3,150</u>

Abnormal Loss

Materials	100 units @ Rs. 8 per unit	= 800
Labour	100 units @ Rs. 6 per unit	= 600
Overheads	100 units @ Rs. 3 per unit	= 300
		<u>1,700</u>

Process A A/c

Particulars	Units	Amt. (Rs.)	Particulars	Units	Amt. (Rs.)
To Materials	4,000	30,200	By Normal loss(10% of 4,000)	400	2,000
To Direct wages		20,700	By Abnormal loss @ Rs. 17	100	1,700
To Factory overheads (50% of direct wages)		10,350	By Process B A/c @ Rs. 17	3,200	54,400
			By Balance c/d	300	3,150
	<u>4,000</u>	<u>61,250</u>		<u>4,000</u>	<u>61,250</u>

Process B A/c

Particulars	Units	Amt. (Rs.)	Particulars	Units	Amt. (Rs.)
To Process A/c (Transfer)	3,200	54,400			

Abnormal Loss A/c

Particulars	Units	Amt. (Rs.)	Particulars	Units	Amt. (Rs.)
To Process A A/c	100	1,700	By Cash (Sale of scrap @ Rs. 5)	100	500
			By Costing Profit & Loss A/c		1,200
	100	1,700		100	1,700

II When There are Opening As Well as Closing Work-in-Progress

Often in a continuous process there will be opening as well as closing work-in-progress which are to be converted into equivalent of completed units before apportionment of process costs. The procedure of conversion of opening work-in-progress will vary depending upon whether average cost method or first in first out method of apportionment of costs is followed. Problems of closing work-in-progress have already been discussed in the previous pages. The following pages will discuss both methods for valuation of work-in-progress one by one :

(a) FIFO Method : Under this method one assumes that the raw materials issued to work-in-progress pass through the finished goods in a progressive cycle, i.e. what comes first, goes out first. This method is satisfactory when prices of raw materials and rates of direct labour and overheads are relatively stable. Work-in-progress at the end of the period becomes the opening work-in-progress for the next period, the closing work-in-progress will be valued at costs ruling during the new period,

while the opening work-in-progress will be valued at costs ruling during the old period. Thus, where costs are more or less the same in each period, this system is adequate. In this method opening incomplete work-in-progress units are to be converted to equivalent production after taking into consideration the percentage of work yet to be done and shown separately in the statement of equivalent production.

(b) Average Cost Method : Simple average method may also be employed to compute process costs in place of FIFO method. The principle underlying it is that since it is not possible to identify or first complete the opening work-in-progress, the work is carried on all units simultaneously and the units to be transferred to next process may not necessarily contain all the units of opening work-in-progress, or, so to say, the closing work-in-progress need not compulsorily be out of units introduced during this period. Moreover, the degree of completion of opening work-in-progress may not be known. Under all such circumstances, average method is to be used for computation of costs. The cost of opening work-in-progress and the cost incurred during the period are added up. The units completed and transferred and the transferred and the equivalent units of closing work-in-progress on the basis of degree of completion are added to arrive at total equivalent production. The total cost is divided by the total equivalent production to obtain the per unit cost. The evaluation may be done separately for material cost, labour cost and overhead cost as per the stage of completion reached in respect thereof.

Thus, the main difference between FIFO method and average method is that units of opening work-in-progress and their cost are taken in full under average method while under FIFO method only the remaining work done now is considered.

Illustration 11 : In a process inventory in process at the beginning of a period was valued at Rs. 2,950 made up of Rs. 1,400 towards materials, Rs. 1,000 towards labour and Rs. 550 towards overheads for 100 units. The value added during the period was Rs. 53,600 towards an introduction of 4,100 units from the previous process besides Rs. 40,800 towards labour and Rs. 19,400 towards overheads. Out of 3,600 units completed 3,300 units were transferred to the next process leaving the balance in stock. 400 units were held back in process with half completion towards labour and overheads while 200 units were lost in processing considered normal and hence should be borne by the entire inventory. Prepare a cost of production statement using average cost basis.

Solution :

Statement of Equivalent Production And Cost

Input	Output			Materials		Labour		Overhead	
				%	Units	%	Units	%	Units
Opening Stock	100	Normal Loss	200	–	–	–	–	–	–
Added during the period	4,100	Units Completed	3,600	100	3,600	100	3,600	100	3,600
		Closing WIP	400	100	400	50	200	50	200
	4,200		4,200		4,000		3,800		3,800
Current Cost					1,400		1,000		550
					<u>53,600</u>		<u>40,800</u>		<u>19,400</u>
					55,000		41,800		19,950
Total Rs. 30					Rs.13.75		Rs. 11		Rs. 5.25

Evaluation Statement

		Rs.
Completed units	$3,600 \times \text{Rs. } 30 =$	1,08,000
Closing WIP	Material $400 \times \text{Rs. } 13.75 = 5,500$	
	Labour $200 \times \text{Rs. } 11 = 2,200$	
	Overhead $200 \times \text{Rs. } 5.25 = \underline{1,050}$	8,750

Process II Account

Particulars	Units	Rs.	Particulars	Units	Rs.
To Opening Inventory	100	2,950	By Normal Loss	200	–
To Input Materials	4,100	53,600	By Completed & transfer to process		
To Labour		40,800	III	3,300	99,000
To Overhead		19,400	By Finished Stock	300	9,000
			By Closing WIP	400	8,750
	4,200	1,16,750		4,200	1,16,750

19.16 ACCOUNTING FOR JOINT PRODUCTS

In certain industries, where process costing is used, the processing of the basic raw material results in the production of more than one product. These products are called joint products or by-products. Joint products and by-products are simultaneously produced in natural proportions. In other words, production of joint and by-products cannot be avoided and their proportions cannot be changed by choice.

Joint products are products which by the very nature of the production process cannot be produced separately, and which have more or less equal economic importance. They represent "two or more products separated in the course of the same processing operation, usually requiring further processing, each product being in such proportion that no single

product can be designated as the major product". For example, gasoline, diesel, kerosene, lubricating oil, coal tar, paraffin and asphalt are the joint products obtained from crude oil in a refinery. Different grades of lumber resulting from a lumbering operation are another example.

Sometimes a distinction is made between joint product and co-products. Co-products do not always arise from the same operation or raw materials and the quantity of co-products is within the control of the manufacturer. For example, in the automobile manufacturing industry, a number of co-products such as cars, jeeps and trucks of various types may be produced in different quantities according to the need of the concern, while in the oil industry, the quantity of various joint products remains almost the same and cannot be changed without changing the quantity of the rest of the items.

Generally the products are not identifiable as different individual products until a certain stage of production known as split off point. All costs incurred prior to the split off point are called joint product costs. Accounting for joint products implies the assignment of a portion of the joint cost to each of the joint products. Unless the joint product costs are properly and reasonably apportioned to different joint products produced, the cost of joint products will vary considerably and this will affect valuation of inventory, pricing of products and profit or loss on sale of different products. Therefore, the basic problem in respect of joint products is that of apportioning the joint costs. The following methods of apportionment of total cost before separation point are available for application :

- (a) Average unit cost method.
- (b) Physical measurement method.
- (c) Survey method or points value method.
- (d) Contribution or gross margin method.
- (e) Market value method :
 - (i) At point of separation
 - (ii) After further processing.
 - (iii) Net realisable value or reverse cost method.

The discussion on these methods is as follows :

(a) Average Unit Cost Method : This method is very simple and the total costs are assessed, yielding an average unit cost with one net profit for the total operation. This can be applied where processes are common and inseparable for the joint products and where the resultant products can be expressed in the same common unit. This means that all joint products have the same unit cost and therefore, if price fixing is based on cost of various products which may be of different grades or quality will be sold at the same unit price, resulting in a customer's price advantage in high grades. Moreover, where the end products cannot be expressed in some common unit, this method breaks down.

Illustration 12 : Jyoti Corporation produces four products in a manufacturing process. The Corporation produced 10,000 units of A, 20,000 units of B, 15,000 units of C and 25,000 units of D. The costs before split off point for the four products were Rs. 1,40,000. Using the average unit cost method (a) calculate the unit cost, and (b) show how the joint cost would be apportioned among the products.

Solution :

$$\begin{aligned}
 \text{(a) Average unit Cost} &= \frac{\text{Joint Cost}}{\text{Total Number of Units Produced}} \\
 &= \frac{\text{Rs. 1,40,000}}{70,000} = \text{Rs. 2 per unit}
 \end{aligned}$$

(b) Cost apportioned among different products :

$$\begin{array}{ll}
 \text{Product A} = 10,000 \times 2 = \text{Rs. 20,000} & \text{Product C} = 15,000 \times 2 = 30,000 \\
 \text{Product B} = 20,000 \times 2 = \text{Rs. 40,000} & \text{Product D} = 25,000 \times 2 = 50,000
 \end{array}$$

(b) Physical Measurement Method : A physical base such as raw materials weight, linear measure volume etc., is applied in apportioning pre-separation point costs to joint products. For example, if there is 40%

beef in product X and 60% beef in Product Y, 4/10 of the cost upto separation point will be charged to X and 6/10 to Y. This method is not suitable where, for example, one product is a gas and another is liquid. This method presupposes that each joint product is equally valuable, which is probably not the case in practice.

Illustration 13 : The following data have been extracted from the books of M/s India Coke Co. Ltd.

Joint Products	Coke	Coal Tar	Benzol	Sulphate of Ammonia	Gas	Total
Yield in Lbs. of recovered products per tonne of coal	1,420	120	22	26	412	2,000

The price of coal is Rs. 80 per tonne. Direct labour and overhead cost of point of split off are Rs. 40 and 60 respectively per tonne of coal. Calculate the material, labour, overhead and total cost of each product on the basis of weight.

Solution :

Particulars	Yield (in Lbs. of recovered products per ton of coal)	Percentage of total	Apportioned Cost			
			Coal	Direct Labour	Over-head	Total
Coke	1,420	71.0	56.80	28.40	42.60	127.80
Coal Tar	120	6.0	4.80	2.40	3.60	10.80
Benzol	22	1.1	0.88	0.44	0.66	1.98
Sulphate of Ammonia	26	1.3	1.04	0.52	0.78	2.34
Gas	412	20.6	16.48	8.24	12.36	37.08
Total	2,000	100	80.00	40.00	60.00	180.00

(c) Survey Method or Points Value Method : Under this method, the common costs are apportioned to joint products after considering a number

of factors such as volume, selling price, mixture, technical, engineering and marketing processes. Accordingly, percentage or points values are assigned to individual products to denote their relative importance and costs are apportioned on the basis of total points. This method is generally considered to be more equitable than other methods in as such as a combination of related factors is considered. It can be used period after period until there are changes in the methods of production and sale.

Illustration 14 : A canning merchant supplies you the following information for a particular period :

Grade	Units produced
A	1,000
B	1,600
C	2,000

The pre-separation costs incurred were Rs. 41,400. The joint costs are apportioned on technical evaluation based in the proportion of 5:3:2 to the three grades respectively. You are required to apportion the joint costs.

Solution :

Apportionment of Joint Costs (Survey Method)

Items	Units	Points Attached	Equivalent Units	Cost Per Equivalent	Apportioned Cost (Rs.)	Cost per Unit (Rs.)
(1)	(2)	(3)	(4) = 2×3	(5) = 41400/ 13800	(6) = 4×5	(7) = 6/2
Grade A	1,000	5	5,000	3	15,000	15
Grade B	1,600	3	4,800	3	14,400	9
Grade C	2,000	2	4,000	3	12,000	6
	4,600		13,800		41,400	

(d) **Contribution or Gross Margin Method :** This method uses the technique of marginal costing. The joint costs are segregated into two

joint product. This is the most popular and convenient method because it makes use of a realistic basis for apportioning joint costs.

(i) Market Value at the point of Separation or Relative Market Value Method : Under this method, the separation point are ascertained and joint costs are apportioned in the ratio of either selling prices or sales value. The use of selling prices may result in completely invalid apportionments and as such sales value becomes an equitable basis. This method can be effectively used when disproportionate costs are incurred on joint products after the point of separation.

Illustration 16 :

The joint cost of making 100 units of product A, 200 units of product B and 300 units of product C is Rs. 2,700. The selling prices of products A, B and C are Rs. 4, Rs. 6 and Rs. 8 respectively. The products did not require any future processing after the split off point.

You are required to a portion the joint costs on (a) selling price basis; and (b) sales value basis.

Solution :

a) **Apportionment on Selling Price Basis**

Product	Selling Price per Units (Rs.)	Cost Apportionment Ratio	Apportioned Cost (Rs.)
A	4	4/18	600
B	6	6/18	900
C	8	8/18	1,200
Total	18		2,700

a) **Apportionment on Sales Value Basis**

Product	Quantity Sold	Selling Price per Unit (Rs.)	Sales Value (Rs.)	Cost Apportioned	Apportioned Cost (Rs.)
A	100	4	400	1/10	270
B	200	6	1,200	3/10	810
C	300	8	2,400	6/10	1,620
			4,000		2,700

(ii) **Market value after further processing** : This method is easy to operate because selling prices of the various joint products will be readily available. Further processing cost is deducted from the sales value in order to calculate the ratio in which the joint costs are to be apportioned. Sales value after deducting further expenses are used as the basis for apportioning cost up to the point of separation.

Illustration 17 : X Co. Ltd. manufactures two joint products A and B and sells them at Rs. 5 and Rs. 4 per unit respectively. During a particular period, 400 units of A and 500 units of B were produced and sold. The joint cost incurred was Rs. 180 and further processing costs for products A and B are Rs. 1,600 and Rs. 1,500 respectively. Apportion the joint cost.

Solution :

Product	Units Produced	Selling Price per unit	Sales	Less further processing cost	Sales value less further processing cost	Ratio	Apportioned joint costs
A	400	5	2,000	1,600	400	4/9	80
B	500	4	2,000	1,500	500	5/9	100
					900		180

(iii) **Net Realisable Value or Reverse Cost Method** : From the selling price of the finished products are deducted estimated net profit, direct selling and distribution expenses and the cost of further processing after the separation point. A ratio is established on the basis of which the total costs before separation point is apportioned. Subsequent costs are added to arrive at product costs. This method is extensively used in many industries such as oil refineries, lumber mills, etc.

19.17 ACCOUNTING FOR BY-PRODUCTS

By-products refer to secondary or subsidiary products having some saleable or usable value produced incidentally in the course of manufacturing the main product. According to ICMA terminology, a by-product is "a product which is recovered incidentally from the material used in the manufacture of recognised main products, such a by-product having either a net realisable value or a usable value which is relatively low in comparison with the saleable value of the main products. By-products may be further processed to increase their realisable value". For example, in sugar industries, sugar is the main product, and fibres from sugarcane for lining materials, molasses for the manufacture of alcohol are by-products. Similarly in coke ovens, gas and tar produced along with the main product 'coke' are by-products.

Distinction between Joint Products and By-products

The classification of various products from the same process into joint products and by-products depends upon the relative importance of the products and their value. If the various end products are almost equal in importance and their value is also more or less the same, they may be identified as joint products. But, if one end-product has greater importance and higher value and the other products are of less importance

and rather of low value, the latter may be classified as by-products. It may be noted that the value of some end-products may be so insignificant that they may be classified as waste or scrap. Further joint products are produced simultaneously but by-products are produced incidentally in addition to the main product.

However, cases are not uncommon where the main products of one industry become the by-products of another. In such a case, the following factors may be taken into consideration in making distinction between joint products and by-products.

(i) **Manufacturing Objective** : If the objective of a concern is to produce say, product A, other products, say B and C, produced incidentally, will be treated as by-products because the plant objective is to produce only one product i.e. product A. On the other hand, if the objective of another concern is to produce products B and C and if product A emerges incidentally, then products B and C will be treated as joint products while Product A will be treated as a by-product. Again, if the objective of a third concern is to produce products A, B and C simultaneously, then all the three products will be termed joint products.

(ii) **Value** : If the value of one product is considerably low as compared with that of another, which is simultaneously produced, then the former is liable to be classified as a by-product. On the other hand, if the value of a product, which is incidentally produced, is of considerable importance as compared with that of the main product it may be classified as a joint product.

Accounting of by-products may broadly be classified into the categories :

(i) **Non-cost or sales value methods** : These methods do not attempt to cost by-products or its inventory. The following are the main methods

which are included in this group :

- (a) Other Income or Miscellaneous Income Method.
- (b) By-product's sales added to the main product's sales.
- (c) By-product's value deducted from the total cost.
- (d) Credit of sales value less selling and distribution expenses.
- (e) Credit of sales value less selling and distribution expenses as well as cost incurred after split off.
- (f) Credit of sale value less selling and distribution expenses, cost incurred after split off and estimated profit or Reverse Cost Method.
- (ii) **Cost Methods** : These methods attempt to apportion some of the joint cost to by-products. The following methods are included under this category:
 - (a) Opportunity or replacement cost method,
 - (b) Standard cost method, and
 - (c) Apportionment on suitable basis.

These methods will now be discussed one by one.

(i) Non-cost or Sales Value Methods

- (a) **Other income or miscellaneous income method** : Under this method, the sales value of by-product, which is negligible, is credited to the Profit and Loss Account treating it as other or miscellaneous income. By-products which are not sold and are in stock are valued at nil value for Balance Sheet purposes and thus vitiate the valuation of closing stock. Accounting of by-products by this method is also inaccurate as there is a time lag between the sale and production. There is also a possibility that by-products may arise in one period but may be accounted in another period and thus distort the profits of two periods.
- (b) **By-product's sales added to the main product's sales** : Under this method, all costs incurred on main and by-products are deducted from

the combined sales of the main product and by-products. This method is generally adopted in those cases where either the value of the by-products is very small or where the by-products are sold in the market in the state in which they emerge from the main product. By-products in stock are valued at nil value for balance sheet purposes.

(c) **By-product's sales deducted from total cost.** Under this method, the sales value of by-products are deducted either from production costs or from the cost of sales. Fluctuating costs of by-products also affect the costs of the main product and may encourage to conceal the inefficiencies therein. The stock in this case will be valued at total cost or cost of sales basis.

(d) **Credit of sales value less selling and distribution expenses :** Under this method, the selling and distribution costs incurred for selling the by-products are deducted from the sales value of by-products and the net amount is either credited to process account or is deducted from total cost.

The closing stock of by-products is valued at selling price less an estimate of the cost likely to be incurred in selling the stock of by-products.

(e) **Credit of sales value less selling and distribution costs and its incurred on further processing :** Under this method, selling and distribution costs and costs incurred on further processing the by-products are deducted from the sale value of the by-products and net amount is credited to the process account. The closing stock of by-products is valued at selling price less an estimate of the cost likely to be incurred in selling and processing the stock of such by-products. This method suffers from the disadvantage that, if the market value of by-product fluctuates, the credit to the Process Account of main product will fluctuate accordingly. Owing to the fact that credit to the main product Process Account fluctuates, inefficiencies in that process may be concealed.

Illustration 18 :

In the Manufacture of main product, 200 units of a certain by-product were produced. The market value of the by-product was Rs. 40 per unit. The by-product required further processing costs amounting to Rs. 3,000 and selling and distribution overheads amounting to Rs. 500 are incurred. Calculate the amount to be credited to the Process Account in respect of the by-product.

Solution :

	Rs.	Rs.
Sales value of 200 units @ Rs. 40		8,000
<i>Less</i> : Further processing costs	3,000	
Selling & distributing costs	<u>500</u>	3,500
Amount to be credited to Process Amount		<u>4,500</u>

(f) **Reverse cost method** : Under this method an estimated profit from the sale of by-products, selling and distribution expenses and further processing costs after the split off points are deducted from the sales value of by-products and the net amount is credit to the main product.

(ii) Cost Methods

The following methods are included in this category :

(a) **Opportunity or Replacement Cost Method** : This method is adopted where by-products are utilised in the undertaking itself as input material for some other process. The opportunity cost, i.e., the cost which would have been incurred, had the by-product been purchased from outside suppliers is taken as the cost of the by-product. The Process Account is credited with the value of the by-products so ascertained. For example, in the production of a main product, 200 units of a by-product A are produced, which are transferred to another product where they are consumed. If the by-product were purchased from the market, the price would be Rs. 3 per

unit. Thus, the amount to be credited to the main product in respect of the by-product under this method is $20 \text{ units} \times \text{Rs.}3 = \text{Rs.} 600$.

(b) Standard Cost Method : Under this method, a standard cost is set on the basis of technical assessment for each by-product and credit is given to the process account on this basis. The standard may be arrived at on the basis of past average price or may be fixed according to the principles of standard costing. As credit in respect of the by-product cost is a stable figure under this method, effective control can be exercised on the cost of the main product.

(c) Apportionment on Suitable Basis : Where by-products are of major significance, the cost should be apportioned on the most suitable basis. This method is followed where by-products are processed (i) to dispose of waste material more profitably, or (ii) to utilise idle plant. In the first case, by-products after separation are charged with overheads at full rates, whereas in the second case, by-product costs after separation will include variable costs only.

Illustration 19 : 1,000 Kg. of 'X' is processed to give 700 kg. of A and 300 kg. of B. The joint cost before the separation point is Rs. 4,600. From the following data, show the apportionment of the joint cost and the profit of each product under : a) physical measurement : (b) market value at separation point and (c) market value after further processing.

	A	B
Selling price at the point of separation	8.00	12.00
Further processing costs after separation	800	400
Selling price after further processing	12.00	18.00

Solution :**a) Physical Measurement Method**

	A	B
Ratio for apportionment of the joint costs	700/1000	300/1000
Share in the Joint Cost	$\frac{700}{1000} \times 4600$	$\frac{300}{1000} \times 4600$
	= Rs. 3,220	Rs. 1,380

b) Market Value at Separation Point

	A (Rs.)	B(Rs.)	Total (Rs.)
Sales	(700×8)	(300×12)	
	5,600	3,600	9,200
<i>Less</i> Joint Cost	2,800	1,800	4,600
Profit	<u>2,800</u>	<u>1,800</u>	<u>4,600</u>

c) Market Value after Separation Point

	A (Rs.)	B (Rs.)	Total (Rs.)
Sales	(700×12)	(300×18)	
	8,400	5,400	13,800
<i>Less</i> Joint Cost	2,800	1,800	4,600
Profit	<u>5,600</u>	<u>3,600</u>	<u>9,200</u>

19.18 SUMMARY

In case of mass production concerns the products when produced are of the same type, and involve the same material and labour and pass through the same set of processes. In such industries each process is designated as a separate cost-centre and the cost per unit is calculated by dividing the total cost of the process with the total number of units produced by the process. The cost of production of the product is obtained

by adding the unit costs of various processes through which the product has passed. This method of costing is known as process costing.

In business where a product passes through different stages of production, each distinct and well defined, process costing is employed. A separate account for each process is opened and all expenditure pertaining to a process is charged to that process account. Thus, the cost of the product at each stage of manufacture is found out. The partially worked product of process may either be transferred to a Process Stock Account from where it will be sent to the next process as and when required or may be sent directly to the next process. Thus, in process costing the finished product of a preceding process becomes the raw material of the next process.

19.19 KEYWORDS

Job costing: It is method of costing which is adopted to execute the work strictly according to customers specification.

Process costing: Process costing refers to a method of accumulating cost of production by process.

Normal loss: The loss which is inherent in the production process and which cannot be controlled is known as normal loss.

Joint products: When two or more products of equal importance are simultaneously produced from the same basic raw materials from a common process, they are known as joint products.

By-product: By-products refer to any saleable or usable value incidentally produced in addition to the main product.

19.20 SELF ASSESSMENT QUESTIONS

1. What do you understand by job costing ? What are the main features of this method ? Give a proforma cost sheet under such a system.
2. What do you mean by process costing ? In what types of industries is process costing generally applied ?
3. Describe the features of Process Costing. How is unit cost determined in process costing ?
4. What do you understand by the term "inter-process profits"? What is the utility of transferring the output of one process to another process at more than cost?
5. In a manufacturing concern with several departments, the finished product of one department becomes the raw material of the next department. Would you advocate inclusion of profit in the transfer price of the material? What would be the effect of this in the profit and loss account of the manufacturing concern as a whole?
6. Define and explain the terms 'joint Products' and 'by-products'. Enumerate the methods which may be employed in costing 'joint products'.
7. A factory uses a job costing system. The following cost data are available from the books for the year ended 31st March :

	Rs.
Direct material	9,00,000
Direct wages	7,50,000
Profit	6,09,000
Selling and distribution overheads	5,25,000
Administrative overheads	4,20,000
Factory overheads	4,50,000

Required :

- (a) Prepare a cost sheet indicating the prime cost, works cost, cost of sales and sales value.

(b) In the current year, the factory has received an order for a number of jobs. It is estimated that the direct materials would cost Rs. 12,00,000 and direct labour Rs. 7,50,000. What would be the price for these jobs if the factory intends to earn the same rate of profit on sales, assuming that the selling and distribution overheads have gone up by 15%. The factory recovers its factory overheads as a percentage of the direct wages and its administrative and selling and distribution overheads as a percentage of works costs, based on the cost rates prevalent in the previous year.

8. RK Ltd. has to quote for a price for job No. 450. The cost estimator has produced the following data :

Direct materials : 34 units @ Rs. 2 per unit.

Direct : Deptt. A 12 hours @ Rs. 2 per hour

Deptt. B 20 hours @ Rs. 1.80 per hour

The following additional information is extracted from the company's budgets :

Deptt. A Variable overheads Rs.	18,000
Hours to be worked	18,000
Deptt. B. Variable overhead Rs.	18,000
Hours to be worked	10,000
Fixed overhead for the company Rs.	1,00,000
Total hours to be worked	50,000

Profit is taken at 20% of the selling price.

You are required to prepare a job cost sheet.

9. The product of a manufacturing concern passes through two processes, A and B then to the finished stock. It is ascertained that in each process 5% of the total weight is normally lost and 10% is scrap which from Processes A and B, realize Rs. 80 per qtl. and Rs.

120 per qtl., respectively.

The following are the figures relating to both the processes :

	Process A	Process B
Materials in qtls.	1,000	70
Cost of materials in rupees per qtl.	125	200
Wages in rupees	28,000	10,000
Manufacturing expenses in rupees	8,000	5,700
Output in qtls.	830	780

Prepare process cost accounts showing cost per qtl. for each process. There was no stock or work-in-progress in either process

10. From the following details, prepare a statement of equivalent production and a statement of cost and find the value :

- (a) The output transferred; and
 (b) The closing work-in-progress

Opening work-in-progress	2,000 unit
	Rs.
Materials	7,500
Labour	3,000
Overheads	1,500

8,000 units were introduced into the process.

There are 2,000 units in process and the state of completion is estimated to be :

	Rs.
Materials	100%
Labour	50%
Overheads	50%

8,000 units are transferred to the next process

The process costs for the period are :

Materials	1,00,000
Labour	78,000
Overheads	39,000

11. A Ltd., produces 'AXE' which passes through two processes before it is completed and transferred to the finished stock. The following data relate to October :

Particulars	Process I Rs.	Process II Rs.	Finished Stock Rs.
Opening stock	45,000	54,000	1,35,000
Direct materials	90,000	94,500	—
Direct wages	67,200	67,500	—
Factory overheads	63,000	27,000	—
Closing stock	22,200	27,000	67,500
Inter-process profit included in the opening stock	—	9,000	49,500

The Output of Process I is transferred to Process II at 25% profit on the transfer price.

The output of Process II is transferred to the finished stock at 20% profit on the transfer price. The stocks in processes are valued at prime cost. The finished stock is valued at the price at which it is received from process II. Sales during the period are Rs. 8,40,000.

You are required to prepare Process cost accounts and finished goods account, showing the profit element at the each stage.

12. A certain process yields 75% of the material introduced as the main product, 20% as a by-product and 5% being lost. The percentage of material consumed by the main product and By-product is 80:20. The time taken to produce one unit of by-product is half the time taken for a main product units. The overheads have been allocated at 200% of the wages for each product.

	Rs.	Units
Cost data		
Raw Material	10,000	2,000
Labour	8,500	
Overheads	17,000	
Total	<u>35,500</u>	

Ascertain the cost of the main product and by-product.

19.21 SUGGESTED READINGS

1. Cost Accounting by Ravi M. Kishore
2. Cost Accounting by Jawahar Lal
3. Cost Accounting by M.N. Arora
4. Cost Accounting by Khan and Jain

Subject : Accounting for Managers

Course Code : CP-104

Updated by: Dr. Mahesh Chand Garg

Lesson No. : 20

COST CONTROL ACCOUNTS

STRUCTURE

- 20.0 Objective
- 20.1 Introduction
- 20.2 Non-Integral Cost Accounting System
- 20.3 Meaning of Control Accounts
- 20.4 Principal Accounts to be Maintained
- 20.5 Journal Entries
- 20.6 Summary
- 20.7 Keywords
- 20.8 Self Assessment Questions
- 20.9 Suggested Readings

20.0 OBJECTIVE

This lesson will make students familiar with the different accounts to be maintained under Cost Control Accounting System.

20.1 INTRODUCTION

In many small firms, costing system is maintained on memorandum statements whereby cost calculations are made on rough sheets, formal documents, books, cards etc. which are not a part of a set of accounts maintained on double entry principles. The recordings and computations of costs are thus outside the formal accounting system. And there is no doubt that valuable information can be obtained from such a system. But this type of system has the disadvantage of absence of general control and the likelihood of these memorandum records not being available when required. However, in those concerns which have a formal

system of cost accounting, cost book-keeping can be organised in either of the following two ways :

- (a) Cost accounting system independent of financial accounting, known as Independent or Non-integral Cost Accounting; or
- (b) An accounting system, which contains both cost and financial accounts in a single set of account books, known as Integral Accounting.

Thus, the cost accounts may be integrated with or kept separately from the financial accounts.

20.2 NON-INTEGRAL COST ACCOUNTING SYSTEM

In this system, cost accounts are distinct from financial accounts. In other words, cost accounting department maintains a set of books of cost accounts based on the principles of double entry book keeping which is separate from financial books of accounts.

In financial books there are three types of accounts :

- (a) Personal e.g. debtors and creditors.
- (b) Real e.g. cash, stocks, fixed assets, etc.
- (c) Nominal e.g. wages, lighting, heating, discounts, rent and rates, carriage etc.

In cost accounts, there are no personal accounts because cost accounts do not show relationship with outsiders. In real accounts, only stocks are shown in cost accounts. The main emphasis is on nominal accounts where costs are analysed in detail. Thus cost accounting department is concerned mainly with the ascertainment of income and expenditure of the business. It is particularly interested in nominal accounts, to some extent in real accounts but in no way with personal accounts.

Ledgers to be Maintained : The following four important ledgers are maintained by the costing department :

1. **Cost ledger :** This is the principal leader in cost books which controls all other ledgers in the costing department. It contains all impersonal accounts and is similar to General Ledger of financial accounts. It contains, inter alia, a number of control accounts like stores ledger control accounts, wages control account, factory overhead control account etc. and also a cost ledger control account to make the cost ledger self-balancing.
2. **Stores ledger :** This ledger maintains a separate account for each item of store (raw material, components, consumable stores, etc.). It is used for recording receipts, issues and balances of stores both in quantity and amount.
3. **Work-in-progress ledger or job ledger :** It contains a separate account for each job in progress. Each such account is debited with the material costs, wages and overhead chargeable to the jobs and credited with the cost of work completed. The balance in this account represents the cost of unfinished work.
4. **Finished goods ledger :** It contains an account for each item of finished product.

As stated above, the cost ledger is the principal ledger. Other ledgers, i.e, stores ledger, work-in-progress ledger and finished goods ledger are referred to as subsidiary ledgers of the cost accounting department. The cost ledger is made self-balancing by opening a control account for each of these subsidiary ledgers.

20.3 MEANING OF CONTROL ACCOUNTS

Control accounts are the total accounts in the cost ledger. In these accounts, entries are made once in each accounting period on the basis of the periodical totals of transactions in related subsidiary ledgers and books. For

examples, stores ledger control account represents stores ledger in a summary form. Purchases of individual items of stores shown in individual accounts in the stores ledger are totalled and shown in stores ledger control account as total purchases. Similarly, other individual debits and credits in individual accounts in stores ledger are abstracted, totalled and taken to stores ledger control account. Thus the opening balance of this control account should always equal the total of opening balances on each individual account in the stores ledger. In the same way, a control account is also kept for each of the other subsidiary ledgers i.e. job ledger and finished goods ledger. In addition, a control account is opened for cost ledger with the main object of completing the double entry.

The main advantages of control accounts are:

1. Control accounts present the management with a summary of detailed information contained in various subsidiary ledgers.
2. It makes possible the division of accounting work among ledger keepers, thereby resulting in specialisation in work.
3. It permits prompt preparation of Profit and Loss Account and Balance Sheet at the end of each period by providing stock figures without delay.
4. It provides internal check leading to greater accuracy of records.

20.4 PRINCIPAL ACCOUNTS TO BE MAINTAINED

The principal accounts to be maintained in the cost ledger and their functions are summarised below :

- 1. Stores Ledger Control Account :** This account deals with material transactions and is a summary of the value of stores received, issued and balance in store. Receipts are posted from goods received note or invoices to the debit

side of this account. Similarly issues of materials are posted from material requisitions or materials issue analysis sheet to the credit side of this account. The balance of this account represents the total balance of stock which should agree with the aggregate of the balances of individual accounts in the Stores Ledger.

2. Wages Control Account : This account records wage transactions in aggregate. Postings are made from wages analysis sheet. This account is debited with gross wages (paid and accrued) and is closed by transfer of direct wages to work-in-progress and indirect wages to factory, administration and selling and distribution overhead control accounts.

3. Factory Overhead Control Account : This account deals with factory overhead expenses in aggregate. It is debited with indirect material cost, indirect wages and indirect expenses and is credited with overheads absorbed and transferred to work in-progress. The balance in this account represents under or over-absorbed overheads and is transferred to Overhead Adjustment Account or Costing Profit and Loss Account.

4. Work-in-progress Ledger Control Account : This account starts with opening balance of work-in-progress and is debited with materials, labour and factory overheads charged. It is credited with cost of finished goods. Closing balance of this account shows the value of unfinished jobs.

5. Finished Goods Ledger Control Account : This account starts with opening balance of finished goods. It is debited with cost of finished goods transferred from work-in-progress control account and the amount of administration overheads absorbed. This account is credited with cost of sales. The closing balance of this account represents the cost of goods remaining unsold at the end of the period.

5. Administration Overhead account : This account is debited with administration overhead cost and is credited with overheads absorbed by finished goods. The balance in this account represents under or over absorbed overheads which is transferred to Overhead Adjustment Account or to Costing Profit and Loss Account.

However, when administration overheads are excluded from costs, the entire amount is straight away transferred to Costing Profit and Loss Account. And when administration overheads are apportioned to production and selling and distribution overheads, the amounts are transferred to the respective accounts.

6. Selling and Distribution Overhead Account : This account is debited with selling and distribution overhead incurred and credited with selling and distribution overhead absorbed. Its balance represents under or over absorbed overhead.

7. Cost of Sales Account : This account is debited with the cost of goods sold by transfer from finished goods ledger control account and selling and distribution overheads absorbed. It is closed by transfer to Costing Profit and Loss Account.

8. Overhead Adjustment Account : This account is debited with underabsorbed overheads for factory, administration and selling and distribution overheads and is credited with over-absorbed overheads. The balance in this account represents the net amount of over or under-absorption which is transferred to Costing Profit and Loss Account.

Sometimes this account is not maintained and the amount of under or overabsorbed overheads is directly transferred to Costing Profit and Loss Account.

9. Costing Profit and Loss Account : This account is debited with the cost of sales, abnormal losses and under-absorbed overheads. It is credited with sale value of goods sold, abnormal gains and over-absorbed overheads. The balance in this account represents costing profit or loss which is transferred to cost ledger control account.

10. Cost Ledger Control Account : This account is also known as General Ledger Adjustment Account or Financial Ledger Control Account. The purpose of this account is to complete the double entry and make the cost ledger self-balancing. As no personal accounts are kept in the cost books, then in order to complete the double entry, all transactions which arise in financial accounts are debited or credited to the cost ledger control account. For example, wages paid amount to Rs. 250 and as no cash or bank account is maintained in the cost ledger, then in order to complete the double entry, the following entry will be made so as to credit cost ledger control account in place of cash or bank :

Wages Account	Dr.	Rs. 250	
To Cost Ledger Control Account			Rs. 250

This account is sometimes disrespectfully referred to as "dustbin account" because it is for disposing of the odds and ends of double entry which lack a home.

Thus the cost ledger control account is equivalent to debtors, creditors and cash or bank accounts in the financial ledger. Sales are debited to this account and net profit or loss is also transferred to this account. All transfer entries of internal nature which affect only cost accounts and have no implications in financial accounts do not appear in cost ledger control account. For example transfer from stores ledger to work-in-progress, from work-in-progress to finished

goods, etc. are not shown in cost ledger control account. The balance of cost ledger control account represents the total of all balances of impersonal accounts.

20.5 JOURNAL ENTRIES

The use of double entry system in costing records will help in the preparation of trial balance for the costing transactions. The entries for various transactions which can be made with the help of control accounts are mentioned below :

Journal Entries in Cost Books

Particulars of Transactions	Cost Journal Entries
1	2
1. Purchase of materials	Stores Ledger Control A/c Dr. To General Ledger Adjustment A/c
2. Returns to suppliers	General Ledger Adjustment A/c Dr. To Stores Ledger Control A/c
3. Material purchased specially for a job	Work in-progress Control A/c Dr. To General Ledger Adjustment A/c
4. Direct material issued from stores to jobs, capital orders or service order.	Work-in-progress Control A/c Dr. Capital Order No.. A/c Dr. Service Order No... A/c Dr. To Stores Ledger Control A/c
5. Issue of indirect materials	Factory Overhead A/c Dr. To Stores Ledger Control A/c
6. Materials returned from jobs to stores	Stores Ledger Control A/c Dr. To Work-in-progress Control A/c
7. Transfer of materials from one job to another	Receiving Job A/c Dr. To Giving Job A/c
8. Normal wastage of materials and stores	Factory Overhead A/c Dr. To Stores Ledger Control A/c

- | | |
|---|---|
| 9. Abnormal waste of materials | Costing P & L A/c Dr.
To Stores Ledger Control A/c |
| 10. Payment of direct wages as well as indirect wages | Wages Control A/c Dr.
To General Ledger Adjustment A/c |
| 11. Allocation of direct labour | Work-in-Progress Control A/c Dr.
Capital Order No... A/c Dr.
Service Order No... A/c Dr.
To Wages Control A/c |
| 12. Allocation of indirect labour | Factory Overhead Control A/c Dr.
Admn. Overhead Control A/c Dr.
Selling & Distr. Overhead Control A/c Dr.
To Wages Control A/c |
| 13. Abnormal idle time cost | Costing P & L Account Dr.
To Wages Control A/c |
| 14. Normal idle time cost | Factory Overhead Control A/c Dr.
To Wages Control A/c |
| 15. Expenses incurred | Factory Overhead Control A/c Dr.
Admn. Overhead Control A/c Dr.
Selling and Distr. overhead Control A/c Dr.
To General Ledger Adjustment A/c |
| 16. Allocation of works expenses | Work-in-Progress Control A/c Dr.
To Factory Overhead Control A/c |
| 17. Production expenses chargeable to incomplete job | Factory Overhead Suspense A/c Dr.
To Factory Overhead Control A/c
or
Carry down the amount as debit balance in the Factory Overhead A/c |
| 18. Absorption of administration expenses | Finished Stock Ledger Control A/c Dr.
To Adm. Overhead Control A/c |
| 19. Administration Overheads applicable to incomplete jobs. | Admn. Overhead Suspense A/c Dr.
To Admn. Overhead Control A/c
(or carry down as debit balance) |

20. Absorption of selling and distribution overheads	Cost of Sales A/c Dr. To Selling & Distr. Overhead Control A/c
21. Overhead under-absorbed	Overhead Adjustment A/c Dr. To (Appropriate) Overhead A/c
22. Overhead over-absorbed	(Appropriate) Overhead A/c Dr. To Overhead Adjustment A/c
23. Transfer of balance on Overhead <i>Adj.</i> A/c	(i) In case of debit balance Costing P&L A/c Dr. To Overhead Adjustment A/c (ii) In case of credit balance Overhead Adjustment A/c Dr. To Costing P & L A/c
24. Transfer of completed jobs Finished Goods Ledger	Finished Stock Ledger Control A/c Dr. To Work-in-Progress Control A/c
25. Transfer of cost of goods sold	Cost of Sales A/c Dr. To Finished Stock Ledger Control A/c
26. Transfer of cost of sales A/c to P & L A/c	Costing P & L A/c Dr. To Cost of Sales A/c
27. Sales	General Ledger Adjustment Dr. To Costing P & L A/c
28. Transfer of profit or loss	In case of profit : Costing P & L A/c Dr. To General Ledger Adjustment A/c (Reserve the entry in the case of loss)
29. Transfer of capital order to financial books	General Ledger Adjustment A/c Dr. To Capital Order A/c
30. For service orders	(Respective) Overhead A/c Dr. To Service Order No... A/c

Illustration 1: Pass journal entries in the cost books (non-integrated system) for the following transactions :

- (i) Materials worth Rs. 25,000 returned to stores from job.
- (ii) Gross total wages paid Rs. 48,000. Employer's contribution to PF and State Insurance amount to Rs. 2,000. Wages analysis book detailed Rs. 20,000 direct labour, Rs. 12,000 towards indirect factory labour, Rs. 10,000 towards salaries to office staff and Rs. 8,000 for salaries to selling and distribution staff.

Solution :

Journal Entries

Particulars	Dr. (Rs.)	Cr. (Rs.)
(i) Stores Ledger Control A/c To WIP Control A/c (Being material returned from stores)	Dr. 25,000	25,000
(ii) Wages Control A/c To General Ledger Adjustment A/c To Provident Fund and Employees State Insurance Account (Being gross total wages paid)	Dr. 50,000	48,000 2,000
Work-in-Progress Control A/c Factory Overheads Control A/c Office Overheads Control A/c Selling Overheads Control A/c To Wages Control A/c (Being wages allocated)	Dr. 20,000 Dr. 12,000 Dr. 10,000 Dr. 8,000	50,000

Illustration-2 : From the following figures ascertained from Costing Records and Financial Books of a Factory, you are required to pass the necessary entries in the Cost Journal (assume that a system of maintaining control accounts prevails in the organisation).

	Rs.
Purchases	3,90,000
Carriage inward	5,850
Stores issued	3,58,000
Productive wages paid and allocated	3,46,320
Unproductive labour	1,21,680
Other works overheads	2,48,400
Materials used in repairs	3,120
Cost of completed jobs	12,80,630

Solution :**Entries in the Cost Journal**

Particulars		Dr. (Rs.)	Cr. (Rs.)
Stores Ledger Control A/c	Dr.	3,90,000	
To General Ledger Adjustment A/c			3,90,000
(Being the total amount of purchases as ascertained from financial books)			
Store Ledger Control A/c*	Dr.	5,850	
To General Ledger Adjustment A/c			5,850
(Being the total amount of purchases as per from financial books)			
Work-in-Progress Ledger Control A/c	Dr.	3,58,000	
To Store Ledger Control A/c			3,58,000
(Being the amount of stores issued as per material abstract)			
Wages Control A/c	Dr.	3,46,320	
To General Ledger Adjustment A/c			3,46,320
(Being the amount of direct wages paid)			

Work-in-Progress Ledger Control A/c To Wages Control A/c (Being the amount of direct wages allocated to jobs)	Dr.	3,46,320 3,46,320
Wages Control A/c To General Ledger Adjustment A/c (Being the amount of indirect labour paid)	Dr.	121,680 1,21,680
Factory Overheads Control A/c To Wages Control A/c (Being the amount of indirect labour allocated to works overheads)	Dr.	1,21,680 1,21,680
Factory Overheads Control A/c To General Ledger Adjustment A/c (Being the amount of works expenses other than indirect wages as per financial books)	Dr.	2,48,400 2,48,400
Factory Overheads Control A/c To Stores Ledger Control A/c (Being the cost of materials used in repairs)	Dr.	3,120 3,120
Finished Goods Ledger Control A/c To Work-in-Progress Ledger Control A/c (Being cost of completed jobs transferred from work-in-progress A/c)	Dr.	12,80,630 12,80,630

* The amount may be debited to Works Overheads Control Account in place of Stores Ledger Control Account, if Carriage inwards is treated as works overhead.

Illustration -3 : The following balances are extracted from the books of Amrit Manufacturing company :

	1 Jan. 2001	31 Dec. 2001
	Rs.	Rs.
Stores on hand	3,200	4,506
Stock of finished goods	4,870	5,124

Work-in-progress	6,200	4,962
Purchases	–	15,000
Carriage in ward		226
Stores issued		13,800
Wages-direct		13,320
Wages-indirect		4,680
Work expenses-including rent, power, etc.		13,400
Materials issued for repairs		120
Cost of completed production		49,254
Cost of finished goods sold		49,000
Selling expenses		1,134
Office and administration expenses		2,650

The cost journal shows that Rs. 18,266 and Rs. 2,630 were allocated to work-in-progress in respect of works overhead and office overhead respectively.

Pass the necessary journal entries in cost journal and prepare the ledger accounts.

Solution :

Cost Journal

Particulars	Dr.	Cr.
	Rs.	Rs.
1. Stores Ledger Control A/c To General Ledger Adjustment A/c (For purchase of materials)	Dr. 15,000	15,000
2. Stores ledger control A/c To General Ledger Adjustment A/c (Carriage inwards charged to materials)	Dr. 226	226

3.	Work-in-progress ledger control A/c To Stores ledger control A/c (Materials issued to production)	Dr.	13,800	13,800
4.	Wages control A/c To General Ledger Adjustment A/c (Wages paid i.e. 13320 + 4680)	Dr.	18,000	18,000
5.	Work-in-progress ledger control A/c To Wages control A/c (Direct wages charged to production)	Dr.	13,320	13,320
6.	Factory overhead control A/c To Wage control A/c (Indirect wages charged to factory overheads)	Dr.	4,680	4,680
7.	Factory overhead control A/c To Cost ledger control A/c (Works expenses paid)	Dr.	13,400	13,400
8.	Factory overhead control A/c To Stores ledger control A/c (Materials issued for repairs)	Dr.	120	120
9.	Work-in-progress ledger control A/c To Factory overhead control A/c (Works overhead absorbed by production)	Dr.	18,266	18,266
10.	Administration overhead control A/c To General Ledger Adjustment A/c (Office and administration overhead paid)	Dr.	2650	2650
11.	Work-in-progress ledger control A/c To Administration overhead control A/c (Administration overheads absorbed by production)	Dr.	2630	2630
12.	Finished goods ledger control A/c To Work-in-progress ledger control A/c (Cost of completed production)	Dr.	49,254	49,254

13. Cost of sales A/c	Dr.	49,000	
To Finished goods ledger control A/c			49,000
(Cost of goods sold)			
<hr/>			
14. Selling and distribution overhead control A/c	Dr.	1134	
To General Ledger Adjustment A/c			1134
(Selling expenses paid)			
<hr/>			
15. Cost of sales A/c	Dr.	1134	
To Selling and dist. overhead control A/c			1134
(Selling expenses absorbed by cost of sales)			
<hr/>			
16. General Ledger Adjustment A/c	Dr.	50134	
To Cost of sales A/c			50134

Cost Ledger

Stores Ledger Control A/c

To Balance b/d	3,200	By Work-in-progress control A/c	13,800
To General Ledger Adjustment A/c	15,000	By Factory overhead control A/c	120
To General Ledger Adjustment A/c	226	By balance c/d	4,506
	<hr/>		<hr/>
	18,426		18,426

Wages Control A/c

To General Ledger Adjustment A/c	18000	By work-in-progress ledger control A/c	13,320
		By Factory overhead control A/c	4,680
	<hr/>		<hr/>
	18000		18000

Factory Overhead Control A/c

To, wages control A/c	4,680	By work-in-progress ledger control A/c	
To General Ledger Adjustment A/c	13,400		18,266
To Stores ledger control A/c	120		
To Overhead adjustment A/c	66		
(B.F.)	<hr/>		<hr/>
	18,266		18,266

Work-in-Progress Ledger Control A/c

To Balance b/d	6,200	By finished goods ledger control A/c	49,254
To Stores ledger control A/c	13,800	By Balance c/d	4,962
To Wages control A/c	13,320		
To Factory overhead control A/c	18,266		
To Admn. overhead control A/c	2,630		
	54,216		54,216
To balance b/d	4,962		

Finished Stock Ledger Control A/c

To Balance b/d	4,870	By Cost of sales A/c	49,000
To Work-in-progress A/c	49,254	By Balance c/d	5,124
	54,124		54,124
To Balance b/d	5,124		

Administration Overhead Control A/c

To General Ledger Adjustment A/c	2,650	By Work-in-progress control A/c	2,630
		By Overhead adjustment A/c (B.F.)	20
	2,650		2,650

Selling and Distribution Overhead Control A/c

To General Ledger Adjustment A/c	1,134	By Cost of sales A/c	1,134
	1,134		1,134

Cost of Sales A/c

To Finished goods ledger control A/c	49,000	By General Ledger Adjustment A/c	50,134
To Selling and distribution overhead control A/c	1,134		
	50,134		50,134

Overhead Adjustment A/c

To Adm. overhead control A/c	20	By Factory overhead control A/c	66
To Balance c/d	46		
	66		66
		By balance b/d	46

General Ledger Adjustment A/c

To Cost of sales A/c	50,134	By Balance b/d	14,270
To Balance c/d	14,546	(Rs. 3200+4,870+6,200)	
		By Stores ledger control A/c	15,000
		By Stores ledger control A/c	226
		By Wages control A/c	13,320
		By Factory overhead control A/c	4,680
		By Factory control overhead A/c	13,400
		By Selling and dist. overhead control A/c	1134
		By Adm. overhead control A/c	2650
	64,680		64,680
		By balance b/d	14,546

Trial Balance as on 31 Dec. 2001

Name of the Account	Dr. Rs.	Cr. Rs.
Stores ledger control A/c	4,506	
Work-in progress ledger control A/c	4,962	
Finished stock ledger control A/c	5,124	
Overhead adjustment A/c		46
General Ledger Adjustment A/c		14546
	14,592	14,592

20.6 SUMMARY

In cost accounting, the cost books are basically maintained under the two systems namely (a) Non-Integral or Non-Integrated Cost Accounting and (b) Integrated Cost Accounting. The system is called non-integral when cost and financial transactions are kept separately. On the contrary, when cost and financial transactions are integrated, the accounting system is known as integrated. Under the system of non-integral accounting separate ledgers are maintained for cost and financial transaction. The financial accountants look after financial transactions and the cost accountants are responsible for cost accounting transactions. The cost accounting department maintains the stores ledger, work-in-progress ledger, finished goods/stock ledger and cost ledger. Cost Ledger is main ledger and records impersonal accounts i.e. accounts relating to income and expenditure.

20.7 KEYWORDS

Control accounts: Control accounts are the total accounts in the cost ledger.

Integrated cost accounting: When cost and financial transactions are integrated, the accounting system is known as integrated cost accounting.

20.8 SELF ASSESSMENT QUESTIONS

1. Non-integrated accounting is one of the systems of cost control accounting to keep cost books.

(a) Define non-integrated accounting.

(b) Explain the system of non-integrated accounting and state the principal ledgers that are to be maintained

2. You wish to institute control accounts in respect of materials purchased and used in your factory. What purposes do control accounts serve? What accounts would you institute and from what sources would the entries be derived?

3. The Balance in a Company's Works-in-Progress Control Account, as on 31st March, 2002 was Rs. 5,00,000. During the next month the following transactions took place :

	Rs.
Direct wages incurred	60,000
Direct materials issued	2,80,000
Completed work billed at cost	5,25,000
Factory overhead incurred	1,20,000
Special purchases for job	12,000
Sub-contract charges	8,000
Direct expenses	9,000
Materials returned to stores	4,000

You are required to write up the ledger account, carry down the balance and state what the balance represents.

4. Journalise the following transactions in the cost journal of a company :

	Rs.
Stores purchased	45,620
Manufacturing wages	25,440
Sales	66,870
Wages for plant repairs	470
Stores issued for plant repairs	250
Stores issued for production	36,630
Wages for stores department	690
Selling expenses	2,560
Stores returned to suppliers	620
Indirect wages	2,950
Normal waste of stores	290
Wages for repairs to building	290
Normal idle time	560
Stores issued for repairs to building	85
Work on cost	6,100
Balance at end work-in-progress	6,500
Completed stock	2,875
Stores balance on hand	8,900

5. The balances in the Cost Ledger of a manufacturing company on January 1, 2001 were :

	Rs.
Stores Ledger Control Account	35,000
Work-in-Progress Account	64,000
Finished Stock Account	10,000
Cost Ledger Control Account	1,09,000

The following data are supplied for the year 2001 :

Purchase of Materials	2,00,000
Materials issued to Production	1,86,000
Direct Factory Wages	3,00,000
Manufacturing expenses	1,73,000

Selling and Distribution expenses	27,000
Manufacturing expenses recovered	1,72,000
Goods finished	6,48,700
Selling and distribution expenses recovered	27,500
Goods sold at cost	6,35,200
Sales	7,55,700

You are required to show the accounts in the Cost Ledger for the year ended 31st December, 2001, to prepare the Costing Profit and Loss Account for the year, and extract a Trial Balance.

20.9 SUGGESTED READINGS

1. Cost Accounting by Jawahar Lal
2. Cost Accounting by V.S.P. Rao
3. Cost Accounting by Ravi M. Kishore
4. Cost Accounting by Khan and Jain