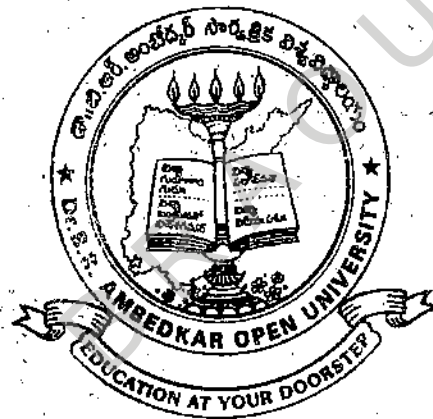


ACCOUNTING FOR MANAGEMENT

“We may forgo material benefits of civilization, but we cannot forgo right and opportunity to reap the benefits of the highest education to the fullest extent...”

-Dr . B.R. Ambedkar



Dr. B.R. AMBEDKAR OPEN UNIVERSITY
HYDERABAD

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PREFACE

The course deals with the topics in 'Accounting for Management' included in the syllabus for the M.Com. (Previous) Programme offered by the Dr. B.R. Ambedkar Open University. The syllabus for the sake of convenience is divided into Blocks, each of which, in turn, comprises a given number of units, depending upon the nature and scope of the subject matter presented in that particular block. The units are prepared by specialists in the field in accordance with a format so designed as to enable the learners to study and comprehend the subject matter with least difficulty. At the end of each unit, Self Assessment Questions are given with a view to test the learners' comprehension of its subject matter. Technical terms which the students may not be familiar with are given at the end of each unit under the 'Key Words' besides summary of the unit.

Accounting for management focuses on the distinctiveness of the use of the accounts of business entities. It addresses itself to the use of accounting information for planning, control and decision-making. The information contained in the financial statements can be used by all the stakeholders in the company. In view of the importance of the application of accounting information for decision-making about a business entity as well as by a business firm, this course provides a comprehensive analysis of the concepts, theories and techniques in a simple and lucid style. It contains a variety of illustrations and exercises to explain the intricacies of the field of management accounting.

The subject matter of this course is organised into 5 blocks consisting of 20 units. Block I is devoted to a detailed discussion on the accounting framework. It presents the basics, principles and standards of accounting. It also describes the relationship between the management accounting and financial accounting, and cost accounting. This block indeed provides a background in which the management accounting tools and techniques are used in the context of decision making. Blocks II & III deal with the analysis of financial statements. These blocks are an attempt to explain various tools of analysis to be used particularly by the external parties while taking decisions on the business enterprise. The fourth block aims at discussing the techniques available in the hands of management for profit planning and cost control. Finally the fifth block is devoted to discuss the recent developments in corporate disclosures that enable the investors and others in taking prudent investment decisions.

The University is of strong belief that this material would help the learners gain adequate knowledge of the core issues in the subject matter of Accounting for Management.

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M. COM. (P) - 2

ACCOUNTING FOR MANAGEMENT

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UNIT - 1 : ACCOUNTING BASICS

Objectives

The purpose of this unit is to introduce to you the basics of accounting.

After studying this unit, you should be able to:

- explain the meaning of accounting;
- discuss the scope of accounting;
- describe the functions of accounting; and
- explain the importance of accounting information in decision making.

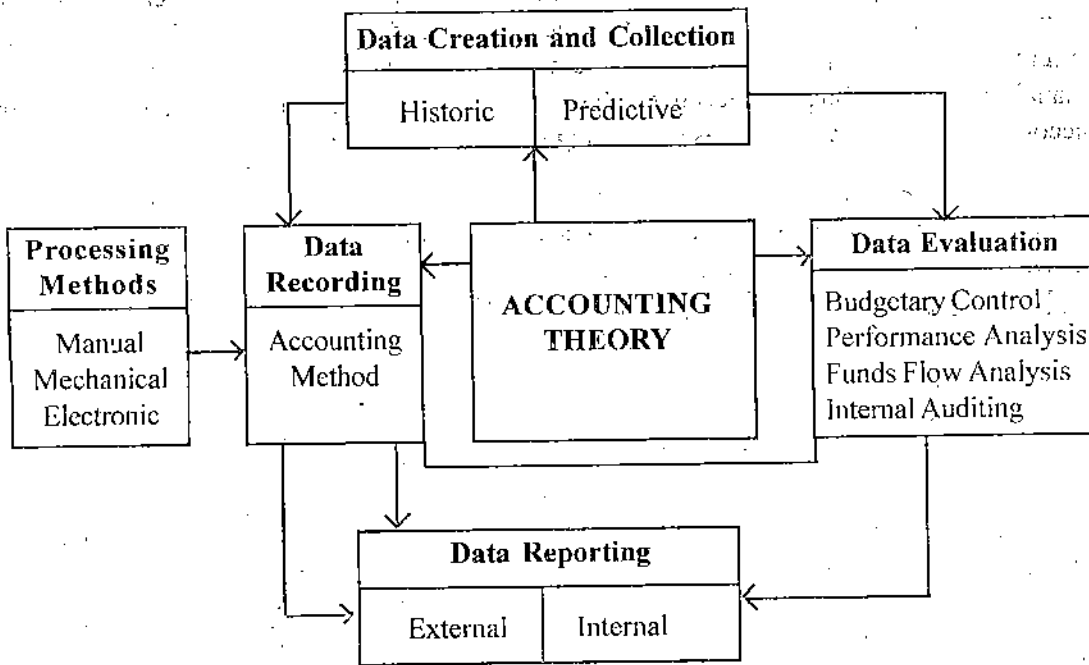
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- 1.6 Accounting Information and its Users
- 1.7 Branches of accounting
- 1.8 Summary
- 1.9 Model Answers to Activities
- 1.10 Self Assessment Questions
- 1.11 Further Readings
- 1.12 Key Words

1.0 INTRODUCTION

Accounting has been responding to the social, economic and technological changes influencing the business environment. Prior to 19th century the concept of book keeping was popular and adequate to meet the functions of stewardship. During 19th century there has been enormous expansion in the business activity. To meet this requirement business enterprises have grown in size and the concept of corporate sector emerged as a powerful constituent of the economic activity. Investment started coming from large number of shareholders spread all over the country. There has been diverse between owners and the management. To meet the challenges book keeping has been transformed into double entry book keeping which not only performed the recording function but also concerned with measurement and reporting of the results of business enterprises.

Figure - 1 : Scope of Accounting



Source: Adopted from R.J. Bull, Accounting in Business, Butterworths, London, 1969, P.2

- i) **Appropriate books of accounts:** The business transactions provide the raw material for accounting. The data collected is 'historic' in the sense it refers to events, which have already taken place. Thus accounting is concerned with what had happened. It does not make any attempt to predict and prepare for future.
- ii) **Data Recording:** After the historic data have been collected, they are recorded in appropriate books of accounts in accordance with the generally accepted accounting theory. A large number of business transactions have to be entered in the books of original entry (journals) and ledgers in accordance with the classification scheme already decided upon.
- iii) **Data Processing:** After the transactions have been recorded in the books of accounts, the data are processed. For this purpose, manual, mechanical and electronic methods may be adopted. In the present day complex business, computers are widely used to process the data. The recording and processing of data accounts for a substantial part of total accounting work.
- iv) **Data Evaluation:** Evaluation of data includes controlling the activities of business with the help of budgets and standard costs (budgetary control), evaluating the performance of business, analysing the flow of funds, and analysing the accounting information for decision-making purposes by choosing among alternative courses of action. The analytical and interpretive work of accounting may be for internal or external uses and may range from snap answers to elaborate reports produced by extensive research. Capital project analysis, financial forecasts, budgetary projections and analysis for reorganisation, take over or merger often lead to research based reports.

Data evaluation has another dimension and this can be known as the auditive work, which focuses on verification of transactions as entered in the books of account and authentication of financial statements. Public professional accountants do this work. However, it has become common these days for even medium sized organisations to

external parties like creditors, investors, bankers, shareholders would form an opinion regarding the profitability and overall financial position of the business.

- vi) **Communicating the Results:** Mere recording, classifying and summarizing the business transactions is not enough but the analyzed and interpreted data are to be communicated to the users. Communication of data helps the people understand the profitability and financial position of the business. With this the persons interested can draw their own conclusions and take suitable decisions. Communication of business results should take place at regular intervals.
- vii) **Validating the Data:** The accountant has an obligation to supply reliable, adequate, relevant, timely and useful data to the interested parties. This is done by the use of internationally accepted accounting standards for preparing the accounts. Consistency in the accounting policies should be ensured so as to facilitate comparison between the firms and also within the firm over a period of time. Any change in the accounting policies in respect of depreciation, inventory valuation, etc., should be distinctly disclosed in the financial reports. This kind of practice makes the information useful and reliable.

1.4 OBJECTIVES OF FINANCIAL ACCOUNTING

Accounting is an information system basically designed to cater to the informational needs of both external and internal parties. Information to external parties is provided through external reporting known as annual reporting. Internal reporting is meant for providing information to the managers working within the organisation at various levels for taking business decisions. More specifically the following are the objectives of accounting:

- i) **Maintenance of Systematic Records:** In financial accounting, information in respect of business events is collected and recorded in appropriate books of accounts. This is done in accordance with the universally accepted accounting concepts and conventions. Such a classified data certainly helps the users of accounting information in arriving at reliable decisions.
- ii) **Protecting Business Properties:** In financial accounting every transaction is recorded systematically in various records. The information in respect of assets and properties owned by the enterprise is also recorded and maintained. As such it checks the unauthorised use of business properties for personal use.
- iii) **Assessing the Operational Performance:** Financial accounting helps to prepare income statements at the end of each accounting period. An income statement reveals the operational efficiency of the business concern in terms of profit earned or loss suffered during the period under consideration. The information provided by the income statement helps the interested parties to assess the operational feasibility of various investment proposals undertaken by the firm.
- iv) **Disclosure of the Financial Position:** The balance sheet prepared by the firm at the end of each accounting period informs the interested parties as to what the firm owns and what it owes to others. This kind of information enables the users to assess the financial strengths and weaknesses of the business. This is particularly useful to existing and prospective investors.
- v) **Facilitates Rational Decision - Making:** Financial accounting provides only factual data. It does not deal with expected or imaginary data. As such the information provided by financial accounting helps the interested parties in arriving at rational decisions concerning the appraisal of investment proposals. It also enables to evaluate the performance of the socially relevant programs undertaken by the business concerns.

control requires a constant review of actual costs from time to time, which is not possible in financial accounting.

- vii) **Price Level Changes:** Financial accounting records only actual cost figures. The prices of fixed assets acquired vary from time to time on account of changes in price levels. Thus the original costs of the assets recorded do not tally with the current price levels. In financial accounting there is no provision for accounting the price level changes from time to time. On the other hand the recorded information fails to provide correct information to the users.
- viii) **Appraisal of Policies:** Financial accounting is an art of recording business transactions. It does not facilitate the comparison of actual performance with desired performance. It is not possible to determine whether the work is going on as per the schedule or not. It provides data in respect of profits only at the end of a financial period. Profitability is the only yardstick for evaluating managerial performance but the profits of a business concern are influenced by a number of external factors also. Therefore, financial accounting cannot be a reliable test for assessing the efficiency of the management.
- ix) **Strategic Decisions:** Business management has to take certain strategic decisions in respect of replacement of labour by machinery, introduction of a new product, discontinuation of an existing line of production, expansion of capacity, etc. For taking these decisions cost benefit analysis will have to be carried out considering their future implications also. In this regard various alternative proposals should be evaluated before a final decision is taken. Financial accounting does not provide any such information.
- x) **Technical Subject:** Financial accounting is a technical subject concerned with the recording of business transactions. The activities of financial accounting are governed by the Generally Accepted Accounting Principles. As such the persons who are not conversant with accounting subject cannot effectively use the data for decision-making purpose.

Activity - 2

What are the limitations of financial accounting?

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1.6 ACCOUNTING INFORMATION AND ITS USERS

Accounting is viewed as a system comprising of a series of interrelated activities. These activities include accumulation, analysis, measurement, interpretation, classification, and summarization of the results of the business transactions. After this, the information is communicated to potential decision-makers in the form of financial statements. The decision-makers are the users of accounting information. Accounting as an information system attempts to link an information source (the accountant) and a set of receivers (external users). Thus accounting is also viewed as a process of communication. In the words of R.J.Chambers, "accounting is the process of encoding observations in the language of the accounting system, of manipulating the signs and statements of the systems and decoding and transmitting the result." Thus, in the accounting system, business transactions and activities are the input and statements and reports given to decision-makers are the output.

- vi) **Consumers:** They expect goods and services of reasonably good quality at reasonable prices. This is possible only when the firm conducts its activities in a satisfactory manner. As such the business organizations have the responsibility of providing them with necessary information.
- vii) **Society:** Business is an economic activity. The prosperity of business enterprises is an indicator of economic well being of the nation. Business organizations have to discharge certain social responsibilities like creation of employment opportunities, infrastructure facilities, and keeping the environment free from pollution, etc. Therefore the accounting system should provide necessary information to the society at large regarding the fulfillment of its social responsibilities.

Activity - 3

What is accounting information? What are its uses?

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1.7 BRANCHES OF ACCOUNTING

Accounting has three main branches. They are (i) Financial Accounting, (ii) Cost Accounting, and (iii) Management accounting. A brief description of these branches of accounting is given below:

- i) **Financial Accounting:** It is concerned with recording and processing of business transactions affecting the financial position of the firm. Preparation of financial statements is an important task of financial accounting. It helps in assessing the commercial viability of the firm through Profit & Loss Account and financial position through Balance Sheet. It provides financial information to various external parties like shareholders, creditors, banks and other financial institutions, government and regulatory agencies, employees, consumers and society.
- ii) **Cost Accounting:** Cost accounting is concerned with the ascertainment of cost of each product or job produced or undertaken by the firm. While in financial accounting cost and revenues are recorded for the firm as a whole, in cost accounting product wise or job-wise recording and analysis is possible. Unlike in financial accounting, cost accounting facilitates estimation of costs and profits. It also facilitates cost control.
- iii) **Management Accounting:** It is any and every technique that assists the management in discharging its functions effectively and efficiently. It provides information to the management for taking decisions. While financial accounting and cost accounting deal with historical data, management accounting is concerned with both historical and projected data.

Owing to ever growing informational needs of various interested parties, new innovations are taking place in accounting. As a result of which, social responsibility accounting, human resource accounting, inflation accounting, and current cost accounting have emerged as major branches of accounting.

- 3) Accounting information refers to the information collected, compiled, analysed, interpreted and communicated to various interested parties.

Accounting provides the necessary information to the interested parties listed below:

- i) Management
- ii) Shareholders
- iii) Prospective investors
- iv) Banks and other financial institutions
- v) Creditors
- vi) Employees and trade unions
- vii) Consumers, and
- viii) Society

1.10 SELF ASSESSMENT QUESTIONS

A. Short Answer Questions

1. What is book-keeping?
2. What is accounting?
3. What are the branches of accounting?
4. What is analysis of financial data?
5. Who are the various users of accounting information?
6. What is validation of data?
7. What are the informational needs of management?
8. What are the functions of accounting?

B. Long Answer Questions

1. Define Accounting and discuss its functions.
2. Explain the objectives of Accounting
3. Explain how accounting helps decision-making.
4. Describe the scope of accounting.
5. Explain the limitations of financial accounting.
6. Who are the users of accounting data? Explain how accounting data helps various parties in taking rational decisions.
7. What are the various branches of accounting? Discuss their objectives.

1.11 FURTHER READINGS

1. Anthony, Robert, N. and James Reece : **Accounting Principles**, All India Traveller Book Seller: New Delhi, 1987.

UNIT - 2 : ACCOUNTING PRINCIPLES AND STANDARDS

Objectives

The purpose of this unit is to describe the Generally Accepted Accounting Principles and Accounting Standards.

After studying this unit, you should be able to:

- explain the meaning and nature of Generally Accepted Accounting Principles;
- discuss various Accounting Concepts and Conventions;
- highlight the need for Accounting Standards; and
- review the status of Accounting Standards in India.

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- 2.0 Introduction
- 2.1 Meaning and Nature of GAAP
- 2.2 Accounting Concepts
- 2.3 Accounting Conventions
- 2.4 Selection of Accounting Principles
- 2.5 Essential Features of Accounting Principles
- 2.6 Nature of Accounting Standards
- 2.7 Need for Accounting Standards
- 2.8 Formulation of Accounting Standards
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- 2.10 Problems in Standards Setting
- 2.11 Standards Setting in Different Countries
- 2.12 Description of Accounting Standards Issued by ASB of ICAI
- 2.13 Reasons for Slow Progress of ASB in Standards Setting
- 2.14 Suggestions for Strengthening the Performance of ASB
- 2.15 Summary
- 2.16 Model Answers to Activities
- 2.17 Self Assessment Questions
- 2.18 Further Readings
- 2.19 Key Words

2.0 INTRODUCTION

The operating results of a business enterprise are reported to the interested parties through financial statements. The information contained in these statements will be useful to the people only if it is collected, classified, summarized and reported objectively. Further, the accounting information should be reliable and free from bias and inconsistencies. In order to ensure this, the financial statements are prepared in accordance with certain generally accepted accounting principles. In the absence of these principles every organisation may be following its own rules,

Principles would generally suggest a universality and a degree of permanence which cannot exist in a human service institution such as accounting”.

Accounting principles serve as broad guidelines and as such individual companies enjoy freedom in using them. However they are required to disclose the policies, methods used by them for recording and reporting the accounting information.

Accounting principles may be defined as those rules of action or conduct, which the accountants universally while recording accounting transaction adopt. They are a body of doctrines commonly associated with the theory and procedures of accounting, serving as an explanation of current practices and as a guide for selection of conventions or procedures where alternatives exist. Accounting principles may be classified into two categories:

- i) Accounting Concepts
- ii) Accounting Conventions.

2.2 ACCOUNTING CONCEPTS

Accounting concepts are also known as accounting standards. They are the basic assumptions or conditions upon which the science of accounting is based. A detailed explanation of various accounting concepts is as follows:

- i) **Money Measurement Concept.** According to this concept all those transactions, which can be measured in money terms, will only be recorded in the books of accounts. Thus the events or transactions, which cannot be expressed in money terms, do not find place in the books of accounts even though they are very important for the business. For example if a business has a team of trusted and dedicated employees, they will be very useful to the business but cannot be shown in the books of accounts as such events cannot be expressed in money terms.

Adoption of this concept provides a common unit of measurement and as such various heterogeneous events and transactions will also be expressed in money value. Thus this concept helps the people in understanding what the business owns and what the others owe to the business.

- ii) **Business Entity Concept:** According to this concept business organisation is treated as a separate entity for the purpose of accounting. According to this concept the transactions pertaining to the owner or separated from the transactions pertaining to business. Accordingly the business transactions alone are recorded in appropriate books of accounts. Further the investment brought in by the owner is treated as capital contribution to the business and any resources of the business used by the owner for his personal consumption are treated as drawings. Accordingly both these transactions are treated as personal accounts. This concept helps us in understanding the performance of the business entity as distinguished from personal transactions. At the end of each accounting period, it is possible to find out as to how much profit the firm could earn or loss suffered by the business concern.

- iii) **Going Concern Concept:** According to this concept it is assumed that the business will continue for a long time to come. Owing to this the assets are valued at their original cost price less depreciation but not at their forced sale value. Adherence to this concept enables the synergistic effect in the utilization of various assets in the business. Otherwise in the minds of investors a kind of fear complexion gets developed on account of the forced liquidation of the business. This will have an adverse impact on the earnings

- vi) **Accounting Period Concept:** according to the going concern concept the business will indefinitely for a long period. As such it becomes difficult to assess the financial position and also to measure the performance of the business. Therefore, there is a need to assess the performance of the business at regular intervals. This interval is known as 'accounting period'. The accounting period is usually of a year. Thus at the end of each accounting period an Income Statement and a Balance Sheet are prepared. While the Income Statement discloses the profit or loss made by the firm during the accounting period, the Balance Sheet presents the financial status of the firm as on the last date of the accounting period.
- vii) **Matching Concept:** The objective of a business enterprise is to earn profit. Profit is the excess of revenue over expenses. In order to ascertain the profits earned by the firm during an accounting year, it is necessary to match the expenses of the period with the revenue of that period. However, in business organisations the transactions are carried out on mercantile basis. As such all the expenses incurred for a particular accounting year for generating the sales revenue during the period need not be paid in cash before the end of accounting period. Similarly the revenue on account of credit sales may not be collected in the form of cash during the accounting period under consideration. On the other hand there may be cases of income received in advance of rendering the service to the customers and certain expenses like insurance premium may be paid in advance of the services to be received. A sound accounting system has to take stock of all these issues while preparing the income statement and the balance sheet. This is precisely known as the matching of costs and revenues concept.
- viii) **Realization Concept:** According to this concept revenue is set to be realised only when a sale is made. Sale is considered to be made at the point when the property in goods passes to the buyer and the buyer becomes legally liable to pay. However there are certain exceptions to this concept.
- i) In case of hire purchase system the ownership of the goods passes to the buyer only when the last installment is paid. But sales are assumed to have been made to the extent of installment received and installments outstanding (i.e., installment due but not received).
 - ii) In case of contract accounts though the contractor is liable to pay only when the entire contract is completed as per the terms and conditions of the contract, the profit is calculated on the basis of the work certified year after year as per certain accepted norms.

2.3 ACCOUNTING CONVENTIONS

- i) **Conservatism:** According to this convention business enterprises have to provide for all possible losses but should not anticipate any unrealized profits. This may result in less acceptable accounting figures to the end users. Thus the accountant follows a policy of "Playing Safe." On account of this the inventory is valued at 'cost or marked price whichever is less'. Similarly provision is made for all possible bad and doubtful debts out of the current year profits. Of late, this convention has been criticised as it is detrimental to the convention of full disclosure. Further there is a possibility of creating secret reserves and as such the financial statements may not depict a true and fair view of the state of affairs of the business. Thus the information contained in the income statement and the balance sheet may understate or overstate the performance of the business.

methods should be chosen such a way that they help minimize cumulative reported earnings. Thus expenses should be recognised as quickly as possible but recognition of revenues should be postponed as long as possible. In the light of this firms prefer to select accelerated depreciation method, LIFO method of inventory valuation during the periods of rising prices.

- iii) **Profit Maximization:** According to this criterion the firms should select such a set of accounting principles that maximize cumulative reported earnings. According to this revenue should be recognized as quickly as possible and the recognition of expenses should be postponed as long as possible. The use of profit maximization as a reporting objective is an extension of the notion that the firm is in business to generate profits and it should present as favorable a report on performance as possible within currently acceptable accounting methods. For example, straight-line method of depreciation would be used during the periods of rising prices. However this criterion contradicts the essence of conservatism criterion in choosing the set of accounting principles for reporting purposes.
- iv) **Income Smoothing:** This criterion suggests that selection of accounting methods that result in the smoothest earnings trend over a period of time. According to this if a company can minimize fluctuations in earnings, the perceived risk of investing in shares of its stock will be reduced and other conditions being equal to its share price will go up. This reporting criterion suggests that net income not revenues and expenses individually is to be smoothed.

Since flexibility is permitted in selecting the accounting principles subjectivity in choosing them takes place in different organizations and also in different time periods within a given firm. As such the business enterprises are required to disclose the accounting principles used in preparing financial statements either in a separate statements or as a note to the principal statements.

2.5 ESSENTIAL FEATURES OF ACCOUNTING PRINCIPLES

Accounting principles are considered as generally accepted accounting principles if they satisfy the following norms:

- i) Usefulness,
 - ii) Objectivity, and
 - iii) Feasibility.
- i) **Usefulness:** According to this norm only such principles that enhance the utility of accounting information to the readers shall be regarded as generally accepted accounting principles. Since accounting principles are useful in making the accounting information more meaningful and useful to the readers, they can be regarded as generally accepted principles.
 - ii) **Objectivity:** Principles can be regarded as objective if they are supported by facts and also not influenced by personal bias. Accounting principles fulfill this norm also.
 - iii) **Feasibility:** Unless the principles are practicable, they cannot gain general acceptance. Assets are recorded in the books of accounts at their cost price less depreciation but not at the market price, which is subject to variations. It is not possible to collect and record the information regarding the price changes.

customers, employees, taxation authorities, etc., for taking sound economic decisions. As such the financial statements should present true and fair view and progress of the business. Application of accounting standards creates confidence among the users of these statements as they insist upon the accountants and auditors to use the best available methods, which facilitate the comparison of results of different segments of the firms, different periods of a firm, different firms, and different industries. In the absence of accounting standards, there would be no incentive to encourage an enterprise to conform to any particular model for the sake of comparison.

ii) Avoids inadequate disclosure and use of inappropriate accounting principles:

If the information disclosed in the financial statements is not sufficient and the accounting principles used are inappropriate, the users of these statements may be misled and as such they may challenge the accountants and auditors of the companies in the court of law. Thus the accountants and auditors face the threat of severe sanctions and bad name to their profession. The risk to the auditors is furthermore severe as insufficient disclosure and use of inappropriate accounting principles may mislead the people. Therefore the use of accounting standards provides them with relief.

iii) Determines the managerial accountability:

The use of accounting standards ensures consistency and comparability with regards to financial reporting. Thus there is a greater scope for inter-firm comparison and intra-firm comparison. The measurement of performance of the firms in terms of profitability, liquidity, turnover, and solvency increases the accountability of the managers. The guidelines of relevance and appropriateness to intend use may be so crucial in a given situation that a departure from uniformity of practice may be justified provided the disclosure is sufficient. Thus the accounting standards significantly reduce the amount of manipulation of the reported information that is likely to occur in the absence of the standard.

iv) Reforms in accounting theory and practice:

Prior to the evolution of accounting standards financial accounting lacked the logical conceptual framework and structure for accounting measurements, financial reporting objectives and sustained evidence on accounting practice and utility of accounting data. It is in this context, the experts in the field started developing accounting theories that improve the existing practices and also rectify their defects. The outbreak in the accounting literature with the issues and arguments about basic concepts in accounting; accounting standards rules and laws; wider effects of accounting policy choices. The search for the golden boomerang of accounting has yielded achievements and resulted into a greater awareness of alternative possibilities for defining and measuring financial performance.

Activity - 2

What are the accounting standards? State the need for accounting standards.

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accounting profession. As such arguments have been advanced for giving standard setting task to private sector body.

The standard setting by private sector body would be more responsive to the needs of diverse interests; more appreciative of the complexities of modern business. As such standard setting by the private sector bodies would be more realistic.

However the standard setting by private sector bodies involve some problems as they are susceptible to charges of inefficiency and are vulnerable to 'capture' by those who are supposed to be under their control. Standard setting by private sector body may be influenced by vested interests and thus may not obviously aid the social welfare. Further the standards set by the private bodies do not enjoy universal acceptance, as they do not command a force of law. As such there will be no compliance with accounting standards.

Standard Setting by Agency

Since the standard setting by the government and private sector bodies has problems, people argue that this task may be entrusted to some agency. In USA, government has delegated the power of setting accounting standards to Securities and Exchange Commission (SEC). In France, Australia and New Zealand also government-backed agencies are functioning in this regard. Thus it may be more appropriate to entrust the task to a government supported independent agency. Such an agency may have technical expertise and may employ qualified professionals to handle the technical matters. But the functioning of an agency may not be free from criticism as it may be under the pressure of political lobbying.

It is difficult to answer precisely as to who should set the accounting standards. In a country like India where accounting profession is not yet fully developed, it may not be advisable to assign the private sector the task of standard setting.

2.10 PROBLEMS IN STANDARDS SETTING

Problems involved in standard setting may vary from country to country due to differences in social, economic, legal, political and accounting environment. However some problems, which are common to all standard setters, are stated below:

- i) **Variations in Definition:** There is consensus regarding the scope of certain terms like accounting principles, concepts and conventions. Some equate accounting with public accounting and others argue that its base is in private enterprises. Similarly some people use the term "principles" as synonym for "rules or procedure." On the other hand others use it as synonym for "conventions." Thus the variations in the scope and level of agreement render the job of the standard setters difficult.
- ii) **Political Influence:** Accounting essentially is a non-political subject. But today it is no longer free from political influence. The information furnished by the accountant has a significant impact on economic behaviour. Therefore the accounting rules affect human behaviour also. Accounting standard setting is certainly a political process. It is a social decision. Since standards place restrictions on behaviour, the affected parties must accept them. In a democratic society like India, getting acceptance is a complicated process and requires skilful marketing in a political arena. Standard setters should be aware of the conflicting interests of different parties and pressures from them.
- iii) **Conflict in Accounting Theories:** There are a number of accounting theories relating to income measurement, asset valuation and capital maintenance. At present, there is hardly any single theory in accounting which commands universal acceptance. Similarly

Standards Setting in USA

Till 1930's accounting evolved with the best professional judgement of Certified Public Accountants and managers. In 1934 the Securities and Exchange Commission (SEC) was established to administer the Securities Act of 1933 and the Securities Exchange Act of 1934. The Commission was given the responsibility and authority to prescribe accounting standards and rules for reports filed pursuant to the securities acts. In 1936, the American Institute of Certified Public Accountants (AICPA) established a Committee on Accounting Procedure. In 1959, the Accounting Principles Board (APB) succeeded the Committee on Accounting Procedure of AICPA. In 1972, the Financial Accounting Standards Board (FASB) was set up as a designated organisation in the private sector for establishing standards of financial accounting and reporting in U.S. FASB promulgates a statement of financial accounting standards (SFAS).

The FASB being a private rule-making agency has neither enforcement powers nor financial accounting foundation.

Standards Setting in India

With a view to harmonising varying accounting policies and practices currently in use in India, the Institute of Chartered Accountants of India (ICAI) formed the Accounting Standards Board (ASB) in April 1997 with representatives from industry and government. In line with the procedure followed in other countries, the preliminary drafts prepared by the study groups and approved by ASB are circulated amongst various external agencies, including the representative bodies of trade, commerce and industry.

The standards are recommendatory in nature in the initial years. Companies listed on a recognised recommend them for use Stock Exchange and other large commercial, industrial and business enterprises in the public and private sectors.

The ASB has been entrusted with the following functions:

- i) To formulate accounting standards which the Council of ICAI in India may establish.
- ii) To propagate the Accounting Standards and persuade the parties concerned to adopt them in the preparation and presentation of financial statements.
- iii) To issue guidance notes on the Accounting standards and give clarifications on issues arising therefrom.
- iv) To review the Accounting Standards at periodical intervals.

The Institute will specify the date of effect of each standard and the class of enterprises to which it will apply. Unless otherwise stated, no standard will have retrospective application. Normally before formulating the standards, ASB will hold discussions with the representatives of the Government, Public Sector Undertakings, Industry and other organisations. An exposure draft of the proposed standard will be prepared and issued for comments received, the draft of the proposed standard will be finalised by ASB and submitted to the Council which will study and modify it, if necessary and issue it under its own authority.

Regarding the position in India, it has been stated that the standards have been developed without first establishing the essential theoretical framework. Without such a framework, it has been contended; any accounting standards and principles developed are likely to lack direction and coherence. This kind of shortcoming also existed in UK and USA but then it was recognised and remedied long back. In the US the first task, which FASB undertook, was to develop a conceptual framework project, which aimed at defining the objectives of financial reporting.

14	AS 14	Accounting for Amalgamations	1-4-1995
15	AS 15	Accounting for Retirement Benefits in the Financial Statements of Employers	1-4-1995
16	AS 16	Borrowing Costs	1-4-2000
17	AS 17	Segment Reporting	1-4-2001
18	AS 18	Related Party Disclosures	1-4-2001
19	AS 19	Leases	In respect of all assets leased during accounting periods commencing on or after 1-4-2001
20	AS 20	Earnings Per Share	1-4-2001
21	AS 21	Consolidated Financial Statements	1-4-2001
22	AS 22	Accounting For Taxes on Income	1-4-2001
23	AS 23	Accounting for Investments in Associates in consolidated financial statements	1-4-2002
24	AS 24	Discontinuing Operations	Recommendatory
25	AS 25	Interim Financial Reporting	1-4-2002
26	AS 26	Intangible assets	1-4-2003
27	AS 27	Financial Reporting of Interests in Joint Ventures	1-4-2002

2.12 DESCRIPTION OF ACCOUNTING STANDARDS ISSUED BY ASB OF ICAI

A brief description of the Accounting Standards issued by ICAI is given below.

AS 1: DISCLOSURE OF ACCOUNTING POLICIES

This Accounting Standard has been issued by ICAI in November 1979. It deals with disclosure of accounting policies in the financial statements. The following are the provisions of the standards. This standard deals with the disclosure of significant accounting policies followed in preparing and presenting financial statements.

- All significant accounting policies adapted in the preparations and presentations of financial statements should be disclosed in one place.
- Any change in the accounting policies which has a material effect in the current period or which may have a material effect in later periods should be disclosed. In case of a change in accounting policies, which has a material effect in the current period, the amount by which any item in the financial statements is affected by such change should also be disclosed with full details.

- Cash flows arising from taxes on income should be disclosed separately

AS 4 (REVISED): CONTINGENCIES AND EVENTS AND OCCURRING AFTER THE BALANCE SHEET DATE

This standard was originally issued in November 1982 and was revised in April 1995. This standard deals with the treatment of liabilities and events occurring after the balance sheet date, in the financial statements. This Accounting Standard defines contingency as a condition or situation, the ultimate outcome of which, whether a gain or loss, will be known or determined only on the occurrence or non-occurrence of one or more uncertain future events.

According to this Standard the following disclosure is required:

- All those events occurring after the balance sheet date that represent material changes and commitments affecting the financial position of the enterprise should be disclosed. Further, such a disclosure should specify the nature of the contingency also.
- The events occurring after the balance sheet date which do not affect the figures appearing in the financial statements but represent commitments affecting the financial position of the enterprise, should be disclosed.

AS 5 (REVISED) : NET PROFIT OR LOSS FOR THE PERIOD, PRIOR PERIOD ITEMS AND CHANGES IN ACCOUNTING POLICIES

This standard was originally issued by the ICAI in 1982 and was revised in February 1997. The objective of this standard is to prescribe the classification and disclosure of certain items in the profit and loss account. It ensures the uniform basis for all enterprises to prepare and present the information with the view enhancing the comparability of the performance.

This standard has the following provisions.

- The nature and amount of change in an accounting estimate should be disclosed. If it is not possible to quantify the amount this fact should also be disclosed.
- Any change in an accounting policy, which has a material effect, should be disclosed. If a change is made in accounting policies, which has no material effect on the financial statements for the current year but expected to have a material effect in later periods should also be disclosed.
- Extra ordinary items if any should be disclosed in the income statement. The nature and amount of each such item should also be separately disclosed.

AS 6 (REVISED): DEPRECIATION ACCOUNTING

This standard has been issued by ICAI originally in 1985 and has been revised in May 1994. This standard deals with depreciation accounting and applies to all depreciable assets. Different accounting policies for depreciation adapted by different enterprises. Therefore disclosure of accounting policies followed by an enterprise in respect of depreciation is necessary to appreciate the view presented in the financial statements of the enterprise. According to this standard the following information should be disclosed in the financial statements.

- The historical cost or other amount substituted for historical cost of each class of depreciable assets.

AS 10: ACCOUNTING FOR FIXED ASSETS

This accounting standard has been issued in April 1991. Certain specific disclosures for accounting on fixed assets are required by accounting standard 1 on "Disclosure of Accounting Policies" and accounting standard 6 on "Depreciation Accounting". In addition to these disclosures AS 10 also requires the following further disclosures:

- Gross and Net book values of fixed assets at the beginning and at the end of the accounting period showing additions, disposals, acquisitions and other movements.
- Expenditure incurred on account of fixed assets in the course of construction or acquisition.
- Revalued amount substituted for historical costs of fixed assets, the method adapted to compute the revalued amounts, the nature indices used, the year of any appraisal made, and whether an external valuer was involved, in case where fixed assets are stated at revalued amounts.

AS 11: ACCOUNTING FOR EFFECTS OF CHANGES IN FOREIGN EXCHANGE RATES

Accounting Standard – 11 pertains to accounting for the Effects of Changes in Foreign Exchange Rates. The need for this Accounting Standard was felt to specify uniform accounting treatment for the effect of exchange rate fluctuations on the various foreign exchange transactions of companies. A statement was accordingly issued by the Institute of Chartered Accountants of India, which later made into a mandatory standard with effect from 1-4-91.

The main provisions of the standard are as follows:

- A transaction in foreign exchange should be recorded in rupees by applying the exchange rate existing at the time of the transaction or a standard rate.
- Gains or losses on settlement of the transactions within the same accounting period should be recognized in the Profit and Loss account of the said period.
- Exchange differences persisting to the amounts incurred for the acquisition of fixed assets should be adjusted in the cost of the fixed assets.
- Current Assets, current liabilities and long-term liabilities pertaining to receipts and payments in foreign exchange should be converted into the closing rates.
- Loss on conversion of current assets and liabilities at the closing rate should be taken to the profit and loss a/c.
- Loss on conversion of long-term liabilities may be deferred.

AS 12: ACCOUNTING FOR GOVERNMENT GRANTS

This Accounting Standard was issued in August 1991 and came into effect in respect of accounting periods commencing on or after 1-4-1992. This standard was recommendatory for an initial period of 2 years as such became mandatory in respect of accounts for periods commencing on or after 1-4-1994. This standard deals with Accounting for government grants, which are also known as subsidies, cash incentives, duty drawbacks, etc. As per this standard the following disclosures are appropriate.

amalgamations and the treatment of any resultant goodwill or reserves. This statement is directed principally to companies although some of its requirements also apply to financial statements of other enterprises. For all amalgamations the following disclosures are considered appropriate in the first financial statements following the amalgamations.

- Names and general nature of business of amalgamating companies.
- Effective date of amalgamation for accounting purposes.
- The method of accounting used to reflect the amalgamation.
- Particulars of scheme sanctioned under a statute

For amalgamations accounted for under the pooling of interest's method the following additional disclosures are required in the first financial statements following the amalgamations.

- Description and number of shares issued together with the percentage of each company's equity shares exchanged to effect the amalgamation.
- The amount of any difference between the consideration and the value of net identifiable assets acquired and the treatment thereof

For amalgamations accounted for under the purchase method the following additional disclosures are required in the first financial statements following the amalgamation.

- Consideration for the amalgamation and the description of consideration paid or contingently payable
- The amount of any difference between the consideration and the value of net identifiable assets acquired and the treatment thereof including the period of amortization of any goodwill arising on amalgamation.

AS-15: ACCOUNTING FOR RETIREMENT BENEFITS IN THE FINANCIAL STATEMENTS OF EMPLOYERS

This accounting standard has been issued in January 1995. It came into effect in respect of accounting periods commencing on or after 1-4-1995. The standard deals with accounting for retirement benefits in the financial statements of employers. Retirement benefits usually comprise provident fund, super-annuation pension, and gratuity, leave encashment benefit on retirement, and post retirement health and welfare schemes and other retirement benefits. The following disclosures are needed.

- In view of diversity of practices used for accounting of retirement benefit costs, adequate disclosure of method followed in accounting.
- Retirement benefit costs are sometimes disclosed separately for statutory compliance. In other cases, they are considered to be an element of employee remuneration and their separate disclosure is not usually made.
- In case the costs related to gratuity and other defined benefit schemes are based on an actuarial valuation, the financial statements should also disclose whether the actuarial valuation was made at the end of the period or at an earlier date. In the latter case, the date of the actuarial valuation should be specified and the method by which the approval for the period has been determined should also be briefly described, if the same is not based on the report of the actuary.

AS 18: RELATED PARTY DISCLOSURES

This standard came into effect in respect of accounting periods commencing on or after 1-4-2001. The objective of this statement is to establish requirements for disclosure of related party relationship and transactions between a reporting enterprise and its related parties. The statutes governing an enterprise often require disclosure in financial statements of transactions with certain categories of related parties like directors or key management personnel of an enterprise especially their remuneration and borrowings due to their fiduciary nature of the relationship with the enterprise.

- Name of the related party and nature of the related party relationship where control exists should be disclosed irrespective of whether or not there have been transactions between the related parties.
- If there have been transactions between related parties, during the existence of a related party relationship, the reporting enterprise should disclose the following
 - i) The name of the transacting related party.
 - ii) A description of the relationship between the parties
 - iii) A description of the nature of transactions.
 - iv) Volume of the transactions either as an amount or as an appropriate proportion.
 - v) Any other elements of the related party transactions of necessary for an understanding of the financial statements.
 - vi) The amounts or appropriate proportions of outstanding items pertaining to related parties at the balance sheet date and provisions for doubtful debts due from such parties at that date; and
 - vii) Amounts written off or written back in the period in respect of debts due from or to related parties.

AS 19: LEASES

This standard came into effect in respect of all assets leased during accounting periods commencing on or after 1-4-2001. The objective of this standard is to prescribe, for lessees and lessors, the appropriate accounting policies and disclosures in relation to finance leases and operating leases.

- The lessor should make the following disclosures for finance leases:
 - a) a recognition between the total gross investment in the lease at the balance sheet date, and the present value of minimum lease payments receivable at the balance sheet date. In addition, an enterprise should disclose the total gross investment in the lease and the present value of minimum lease payments receivable at the balance sheet date, for each of the following periods:
 - i) Not later than one year.
 - ii) Later than one year and not later than five years.
 - iii) Later than five years.
 - b) Unearned finance income.

- i. The nature of the relationship between the parent and a subsidiary, if the parent does not own, directly or indirectly through subsidiaries, more than one-half of the voting power of the subsidiary.
- ii. The effect of the acquisition and disposal of subsidiaries on the financial position at the reporting date, the results for the reporting period and on the corresponding amounts for the preceding period; and
- iii. The name of the subsidiary of which reporting date(s) is/are different from that of the parent and the difference in reporting dates.

AS 22: ACCOUNTING FOR TAXES ON INCOME

This accounting standard has come into effect in respect of accounting periods commencing on or after 1-4-2001. The objective of the statement is to prescribe accounting treatment for taxes on income. The following disclosures are needed:

- An enterprise should offset assets and liabilities representing current tax.
- An enterprise should offset deferred tax assets and deferred tax liabilities.
- Deferred tax assets and liabilities should be distinguished from assets and liabilities representing the current tax for the period. Deferred tax assets and liabilities should be disclosed under a separate heading in the balance sheet of the enterprise.
- The breakup of deferred tax assets and deferred tax liabilities into major components of the respective balances should be disclosed in the notes to accounts.
- The nature of the evidence supporting the recognition of deferred tax assets should be disclosed if an enterprise has unabsorbed depreciation or carry forward of losses under tax laws.

AS 23: ACCOUNTING FOR INVESTMENTS IN ASSOCIATES IN CONSOLIDATED FINANCIAL STATEMENTS

This accounting standard has come into effect in respect of accounting periods commencing on or after 1-4-2002. The objective of the statement is to set out principles and procedures for recognising in the consolidated financial statements. The following disclosure is required.

- Listing and description of associates including the proportion of interest and the proportion of the voting power.
- Classification of long-term investments along with the investors' share of profit or loss.
- A brief description of differences in the accounting policies adopted for the consolidated financial statements.
- The names of associates of which reporting dates are different from that of the financial statements of an investor.

According to this standard an interim period is a financial reporting period shorter than a full financial year. Interim financial report means a financial report containing either a complete set of financial statements (Balance Sheet, Profit & Loss Account, Cash Flow Statement and required notes) or a set of condensed financial statements (Condensed Balance Sheet, Condensed Profit and Loss Account, Condensed Cash Flow Statement and selected explanatory notes). Condensed statements should include, at a minimum, each of the headings and sub-headings of the recent annual financial statements along with necessary information.

An enterprise should include the following information, as a minimum, in the notes to its interim financial statements, if material and if not disclosed elsewhere in the interim financial report.

- a) a statement that the same accounting policies are followed in the interim financial statements as those followed in the most recent annual financial statements or, if those policies have been changed, a description of the nature and effect of the change;
- b) explanatory comments about the seasonality of interim operations;
- c) the nature and amount of items affecting assets, liabilities, equity, net income, or cash flows that are unusual because of their nature, size, or incidence (vide AS-5);
- d) the nature and amount of changes in estimates of amounts reported in prior interim periods of the current financial year or changes in estimates of amounts reported in prior financial years, if those changes have a material effect in the current interim period;
- e) issuances, buy-backs, repayments and restructuring of debt, equity and potential equity shares;
- f) dividends, aggregate or per share (in absolute or percentage terms), separately for equity shares and other shares;
- g) segment revenue, segment capital employed (segment assets minus segment liabilities) and segment result for business segments or geographical segments, whichever is the enterprise's primary basis of segment reporting (disclosure of segment information is required in an enterprise's interim financial report only if the enterprise is required, in terms of AS-17, Segment Reporting, to disclose segment information in its annual financial statements);
- h) the effect of changes in the composition of the enterprise during the interim period, such as amalgamations, acquisition, or disposal of subsidiaries and long-term investments, restructurings, and discontinuing operations; and
- i) material changes in contingent liabilities since the last annual balance sheet date.

The above information should normally be reported on a financial year-to-date basis. However, the enterprise should also disclose any events of transactions that are material to an understanding of the current interim period.

Unusual or extraordinary items, changes in accounting policies or estimates, and prior period items are recognized and disclosed based on materiality in relation to interim period data.

AS – 26 : INTANGIBLE ASSETS

AS – 26 prescribes accounting treatment for intangible assets that are not dealt with specially in another Accounting Standard. The standard requires an enterprise to recognise an

financial statements of ventures and investors. The Standard is mandatory with effect from the accounting periods commencing on or after 01-04-2002.

AS-27 requires a venturer to disclose the following information in its separate financial statements as well as in consolidated financial statements:

The aggregate amount of the following contingent liabilities, unless the probability of loss is remote, separately from the amount of other contingent liabilities:

- a) any contingent liabilities that the venturer has incurred in relation to its interests in joint ventures and its share in each of the contingent liabilities which have been incurred jointly with other ventures;
- b) its share of the contingent liabilities of the joint ventures themselves for which it is contingently liable; and
- c) those contingent liabilities that arise because the venturer is contingently liable for the liabilities of the other venturers of a joint venture.

The aggregate amount of the following commitments in respect of its interests in joint ventures separately from other commitments:

- a) any capital commitments of the venturer in relation to its interests in joint ventures and its share in the capital commitments that have been incurred jointly with other venturers; and
- b) its share of the capital commitments of the joint ventures themselves. A list of all joint ventures and description of interests in significant joint ventures; the proportion of ownership interest, name and country of incorporation or residence in respect of a jointly controlled entities.

The aggregate amounts of each of the assets, liabilities, income and expenses related to its interests in the jointly controlled entities.

2.13 REASONS FOR SLOW PROGRESS OF ASB IN STANDARDS SETTING

In relation to the work done in this area in other countries, the effort put in by ASB in India is not satisfactory. The reasons for the slow progress in India are as follows:

- i) **Indifference Attitude:** Apart from formulating Accounting and Auditing Standards, the Institute of Chartered Accountants of India is also concerned with preparing Chartered Accountants. Since the Institute is concentrating more on conducting chartered accountancy examinations, it could not achieve desired progress in standards setting.
- ii) **Lack of Public Confidence:** In India, ASB of ICAI has never encouraged critics nor it tried to retain confidence through a conscious and deliberate effort to acknowledge the mistakes. Thus lack of initiative in opening the debate in public contributed to the slow progress of standards setting in India.
- iii) **Resistance to Change:** The people involved in accounting profession are not so enthusiastic to welcome changes. In the larger interests of the society, change has been the order of the day. Since this reality has not been recognised, in India the progress made in the area of standards setting is not so encouraging.

preparation of financial statements. Accounting principles are classified into two categories. (i) Accounting Concepts, and (ii) Accounting Conventions. Accounting principles are considered as generally accepted accounting principles if they satisfy the norms like 'usefulness', 'objectivity', and 'feasibility'. The need for accounting standards is increasingly felt as they enhance the credibility and reliability of financial statements, avoid inadequate disclosure and determine managerial accountability. They also bring about reforms in accounting theory and practice. It is difficult to answer precisely as to whom should set the accounting standards. In a country like India where accounting profession is not yet fully developed it may not be desirable to assign the private sector the task of standard setting.

With a view to harmonizing varying accounting policies and practices, currently in use in India, the Institute of Chartered Accountants of India (ICAI) formed the Accounting Standards Board (ASB) in April 1977 with representatives from industry and government. So far, the ASB of ICAI has issued 27 accounting standards. However in relation to the work done in other countries in the area of standards setting, the effort put in by ASB in India is not satisfactory.

2.16 MODEL ANSWERS TO ACTIVITIES

1. Accounting concepts are the basic assumptions or conditions upon which the science of accounting is based. The following are the important accounting concepts:
 - i) **Separate Entity Concept:** The business is considered to be a separate entity from the proprietor(s) for accounting purposes.
 - ii) **Going Concern Concept:** According to this concept it is assumed that the business will continue for a fairly long time to come. It applies to the business as a whole. When an enterprise closes a particular branch or one segment of its operations, the ability of the enterprise to continue as a going concern is not impaired.
 - iii) **Money Measurement Concept:** Accounting records only monetary transactions. The transactions, which cannot be expressed in terms of money do not find a place in the books of accounts though they may be very useful for the business.
 - iv) **Cost Concept:** According to this concept assets are ordinarily entered in the accounting records at the price paid to acquire them, and this cost is the basis for all subsequent accounting for the assets.
 - v) **Dual Aspect Concept:** According to this concept every business transaction has a dual effect viz., debit and credit. For every debit, there is an equivalent credit and vice versa. The accounting equation i.e., $\text{Capital} + \text{Liabilities} = \text{Assets}$ is derived from this concept. As a matter of fact, the entire system of double entry book-keeping is based on this concept.
 - vi) **Accounting Period Concept:** According to this concept, the life of the business is divided into appropriate segments or time intervals for studying the results of the business. Such a segment or time interval is called 'Accounting Period' and is usually of a year.
 - vii) **Matching Concept:** According to this concept, the income made by the business during a period can be measured only when the revenue earned during that period is compared with the expenditure incurred for earning that revenue. In order to ascertain the profit made by the business during a period, it is necessary that 'revenues' of the period should be matched with the costs or 'expenses' of that period.

7. Evaluate the Standards Setting programs of Accounting Standards Board in India.
8. "India has not made significant progress in Accounting Standards Setting" state the reasons for 'slow progress made by ASB of ICAI.
9. Distinguish between Standards and Principles.
10. Distinguish between Accounting Standards and Concepts.

2.18 FURTHER READINGS

1. American Institute of Certified Public Accountants : **Establishing Financial Accounting Standards: Report of the Study on Establishment of Accounting Principles**, New York, AICPA 1972.
2. A.C. Littleton : **Structure of Accounting Theory**, American Accounting Association, 1953.
3. Michael Bromwich : **The Economics of Accounting Standard Setting**, Englewood Cliffs: Prentice Hall International, 1985.
4. George J. Benston : **The Establishment and Enforcement of Accounting Standards: Methods, Benefits and Costs**, Accounting and Business Research (Winter 1980).
5. Peter E. M. Standish : **The Rationale for Accounting Standards Setting**, in MJR Graffin (Ed.), Contemporary Accounting Thought, Prentice Hall of Australia, Sydney, 1984.
6. Ross L. Watts and Jerold L. Zimmerman : **Toward a Positive Theory of the Determination of Accounting Standard**, The Accounting Review (January 1978).

2.19 KEY WORDS

- Accounting Principle** : General law or rule adopted or professed as a guide to action; a settled ground or basis of conduct or practice.
- Accounting Concepts** : Broad general assumptions, which underline periodic financial accounts of business enterprise.
- Accounting Framework** : Generally Accepted Accounting Principles (GAAP) on the basis of which accounting data is processed, analyzed, and reported.
- Accounting Theory** : A set of inter-related principles and proposition, which provide a general framework for accounting practice and deal with new developments in the area.
- Accounting Standards** : Written statements issued from time to time by institutions of accounting profession. They are agreed upon criteria of what is proper practice in a given situation.

delegation of authority has become indispensable for smooth and rapid performance of the activities.

The growing complexity has been creating more difficult problems and thus necessitates the coordination, immediate diagnosis and cure of problems. Organisations are aiming at improvements in operations through specialisation, integration, standardisation and efficiency producing techniques and equipment. In the light of this managements now need facts and information, which are adequate, correct, and understandable in nature, and facilitate quick communication. Financial accounting system, which is traditional in nature, could not meet these requirements. As such, a comprehensive accounting system, namely. Accounting for Management or Management Accounting has been invented.

3.1 MEANING AND DEFINITION OF MANAGEMENT ACCOUNTING

In fact, the idea of management accounting originated by the pioneering efforts of Mr. James H. Bliss who in his "Financial and Operating Ratios in Management" propounded that "it is through the intelligent and effective use of accounting data that the management of a business may maintain the best contacts with details of its operations and affairs and exercise the most control over them". The accounting information should indicate the areas where executive action is needed. Thus, accounting work renders a service to business management by providing complete information useful for planning and controlling the operations.

Management Accounting refers to any and every technique that assists the management in discharging its functions effectively and efficiently. Some of the specific definitions are as follows:

- The Institute of Cost and Management Accountants, London, defines Management Accounting as "The application of professional knowledge and skill in the preparation of accounting information in such a way as to assist management in the formation of policies and in the planning and control of the operations of the undertaking".
- According to the American Accounting Association, Management Accounting is the application of appropriate techniques and concepts in processing historical and projected economic data of an entity to assist management in establishing plans for reasonable economic objectives in the making of rational decisions with a view towards these objectives.
- The Management Accounting Team of the Anglo-American Council of Productivity defines Management Accounting as the presentation of accounting information in such a way as to assist management in the creation of policy and in the day-to-day operations of an undertaking.
- J. Batty defines Management Accountancy as 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 minimising losses.
- In the words of T.G. Rose, Management Accounting is the collection, analysis, diagnosis and interpretation of accounting information in such a way as to help the management.

- iii) **Interpretation of data:** Interpretation of data involves the classification of data and presenting them through suitable reports with proper explanation and descriptions. The data contained in these reports should be un-biased, objective and precise. This will enable the management to take correct policy decisions.
- iv) **Communicating the data:** Mere recording of accounting data does not serve any purpose unless the information is properly communicated to those who are expected to act upon them. The whole business process involving money, men, material and machines is to be converted into money terms of costs, revenues, profits, etc. The information is then transmitted to the management in a desired form and at acceptable intervals.

II. Theoretical Functions

- i) **Helps in forecasting and planning:** Forecasting is a technique of anticipation. On the basis of forecasting planning is done. Planning involves the determination of a course of action that is to be adopted in future. Management accounting provides the needed information to the management for planning the business activities effectively.
- ii) **Helps in organising:** Organising function of management is concerned with creation of positions, selecting the people to fill up the positions and undertaking training and development programs for improving the performance of the employees. In these areas for taking correct decisions management accounting provides the necessary information to the management.
- iii) **Helps in controlling:** Controlling facilitates the comparison of actual performance with the desired performance. Management accounting through its reporting system helps the management to communicate the plans to employees, get the feedback and evaluate the performance.
- iv) **Helps in communicating:** Communication plays an important role in business organisations. Management accounting through its various reports facilitates downward, upward and lateral communication. Thus it is possible to ensure effective coordination and integration of various activities in a business organisation.
- v) **Helps in decision-making:** Management is concerned with taking decisions in various functional areas like production, marketing, finance, etc. For taking correct decisions management needs accurate, timely and adequate information at regular intervals. This is done by the management accounting.

Activity - 1

Assuming yourself as an incharge of management information services in a large size-manufacturing organisation, discuss the functions you are expected to discharge.

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3.3. SCOPE OF MANAGEMENT ACCOUNTING

The scope of management accounting is very wide, as it is a blend of various disciplines like financial accounting, cost accounting, statistical methods, taxation, business laws and

- viii) **Taxation:** Management accounting is also concerned with the ascertainment of tax liability, filing of tax returns as per the rules and regulations of the government in vogue from time to time.
- ix) **Office Services:** In order to present information to the management in right quantity, of right quality, at right time in right form, maintenance of office services like skilled manpower, installation of computers, etc. are needed. Therefore, management accounting is also concerned with the maintenance of office services.
- x) **Internal Audit:** Financial audit is statutory in nature and verifies the arithmetical accuracy of financial transaction. This is also a kind of post-mortem analysis. As such, to verify the authenticity of business transactions, there is a need to conduct audit on continuous basis internally. This would certainly enable the management to check the irregularities, if any, at right time before things become worse.

3.4 IMPORTANCE OF MANAGEMENT ACCOUNTING

Twenty-first century has brought in several new challenges to the business world. Globalisation, liberalisation and privatisation policies have broadened the horizons of trading communities. Multi-national corporations are invited in every part of the world. Though these are welcome features, owing to global competition, the planning, control, coordination and motivation functions of business organisations are becoming complex day-by-day. Added to this, besides profitability, social obligations are also included in the list of business objectives. To face all these challenges rational planning with reasonably economic objectives are needed. There is an urgent need to design and install a sound and comprehensive information system, which collects, compiles, processes, analyses and presents the information to the management for enabling the management to take rational decisions. Such information should include past, present, future, quantitative, qualitative, monetary and non-monetary data. To face these challenges Research and Development activities will have to be taken up on continuous basis. For this, suitable answers are to be searched for the following queries:

- i) Whether investment in the capital expenditure is worthwhile or not?
- ii) How much investment is to be made?
- iii) What are the expected cash flows?
- iv) What would be the impact of the decisions taken on long-term profitability of the firm?

A well-designed Management Accounting System will provide suitable answers to all these queries as management accounting system is considered as an Information System. In all these issues management is not merely informed but stimulated. Thus better and improved services rendered by the management accounting will certainly improve the managerial performance.

Activity - 2

Explain how management accounting helps the management in taking business decisions.

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3.6 DISTINCTION BETWEEN COST ACCOUNTING AND MANAGEMENT ACCOUNTING

Though both cost accounting and management accounting aim at improving the operational performance of business organisations, they differ in certain respects. The following points highlight the distinction between cost accounting and management accounting:

- i) **Objectives:** The basic objective of cost accounting is to improve the performance of the business concerns through the ascertainment of unit cost and cost control methods. Management accounting also aims at assisting the management in designing implementing and evaluating the plans and programs. As such, the objectives of both cost accounting and management accounting are identical.
- ii) **Data used:** Cost accounting is concerned with cost data pertaining to various business activities. Mostly, it deals with historical data. Though it deals with cost estimates, the analysis based on cost data is considered to be a kind of post-mortem analysis. On the other hand, management accounting deals with past, present and future data. While cost accounting is concerned with quantitative data, management accounting is concerned with both quantitative and qualitative data, which are essential for evaluating the relative strengths and weaknesses of various alternatives.
- iii) **Scope:** Cost accounting is concerned with cost ascertainment and cost control. All its focus will be on designing, installing and implementation of costing systems. On the other hand, the scope of management accounting is very wide and in addition to cost information provided by cost accounting, it embraces other accounting information and non-monetary facts also.
- iv) **Nature:** Certain principles, procedures and formats are followed in the system of cost accounting. These are applicable to different times too. However, these are not applicable to management accounting. Facts and information are presented to meet the needs of management by bringing out appropriate changes in principles and procedures from time to time and from concern to concern.
- v) **Parties interested:** Cost accounting caters to the information needs of both internal and external parties. But management accounting caters to the information needs of internal parties' i.e., managers working in the organisation at various levels.

However, these points of distinction do not treat cost accounting and management accounting as separate and independent systems. In fact, they are complimentary to each other. Management accounting without a well-designed cost accounting system would lose its significance. Similarly, cost data and information provided by cost accounting would be of no use for the management in the absence of an effective and efficient management accounting system.

3.7 INSTALLATION OF MANAGEMENT ACCOUNTING SYSTEM

The installation of management accounting system in a comprehensive way in an organisation should be done under the guidance of Management Accountant / Controller of Accounts / Finance Director / Finance Advisor.

The following steps will have to be taken up while installing an efficient management accounting system:

- i) **Preparation of organisational manual:** A comprehensive organisation manual for the entire organisation should be drafted defining the authority-responsibility relationships for

- iv) **It is not a substitute:** Management Accounting is only a tool and as such it cannot replace the management. For arriving at meaningful decisions, management has to combine intuition with scientific approaches. As such, Management Accounting supplements the other approaches but it will not replace them.
- v) **Inter-disciplinary approach:** Management Accounting has very wide scope incorporating many disciplines such as finance, psychology, accounting, statistics, economics, etc. Imbibing all these skills in a single entity is a rare phenomenon.
- vi) **Subjectivity and intuition:** Management Accounting considers both monetary and non-monetary factors. It deals with historical as well as projected economic data. As such, the interpretations are subject to intuition and subjectivity.
- vii) **Evolutionary stage:** Management Accounting is still in its evolutionary stage. As such, it suffers from fluidity of concepts, raw and imperfect analytical techniques. Therefore, its utility is subject to doubts.
- viii) **Resistance to change:** Installation and implementation of Management Accounting system involves a departure from traditional practices. As such, the employees of the organisation would not welcome the change, oppose the change and do not cooperate with the management.

3.9 SUMMARY

Management Accounting is any and every technique that assists the management in discharging its functions effectively and efficiently. It is an information system concerned with the application of professional knowledge and skills. It uses quantitative, qualitative, past, present and expected economic data. Management accounting performs two types of functions namely, (i) operating functions and (ii) theoretical functions. While operating functions present the required facts and information for the use of management in a quantitative form, theoretical functions help in effective performance of managerial functions. The scope of management accounting is very wide, as it is a blend of various disciplines like financial accounting, cost accounting, statistical methods, taxation, business laws and psychology. A well-designed management accounting system provides suitable answers to queries like whether the investment in capital expenditure is worthwhile or not, how much investment is to be made and what are the expected cash flows etc. While financial accounting provides information to external parties, cost accounting provides information to both internal and external parties; management accounting provides information to internal parties only.

3.10 MODEL ANSWERS TO ACTIVITIES

1. Management Accounting performs two types of functions, namely, (i) operating functions and (ii) theoretical functions. While operating functions present the required facts and information for the use of management in a quantitative form, theoretical functions help in effective performance of managerial functions. They are as follows:
 - i) **Operating functions**
 - a) Recording of data
 - b) Validating the data
 - c) Interpretation of data
 - d) Communicating the data

B. Long Answer Questions

1. Define management accounting and discuss its salient features.
2. Financial accounting serves a limited purpose, whereas management accounting is designed to cater to a variety of decision-making purposes. Explain with suitable examples.
3. Discuss the scope of management accounting
4. Describe the factors to be considered while designing a management accounting system.
5. Distinguish between financial accounting and management accounting.
6. Distinguish between cost accounting and management accounting.
7. Discuss the objectives of management accounting.
8. Management accounting is a valuable tool in the hands of management. However, it suffers from certain limitations. What are they? Explain.

3.12 FURTHER READINGS

1. Anthony, Robert N. : **Management Accounting**, Richard D. Irwin, Inc., Homewood, Illinois
2. Bierman, Harold, Jr. : **Management Accounting - An Introduction**, Macmillan Co., New York.
3. Murphy, Mary E. : **Managerial Accounting**, D. Van Nostrand Company, Inc., Princeton, New Jersey, East and West Student Edition.
4. Man Mohan and Shiv N. Goyal. : **Principles of Management Accounting**, Sahitya Bhavan, Agra.

3.13 KEY WORDS

- Management Accounting** : It is any and every technique that assists the management in discharging its functions effectively and efficiently.
- Management Accountant or Controller** : A staff functionary who uses accounting information for managerial planning and control.
- Information System** : A system for collecting, processing, and communicating data at the most relevant time to all levels of management.
- External Reporting** : The production of financial statements for the use by the external interest groups like shareholders and government.

at higher amount of income. In this process they face many uncertainties and various risks in the form of: i) Technical uncertainties which are involved in the process of conversion of inputs into finished goods; ii) Cost uncertainties in the form of changes in the prices of material, wages etc.; iii) Demand uncertainties due to changes in consumers preferences or innovation of new products; iv) Market uncertainties relating to the future prices of the goods and services. The amount of income of any undertaking depends on level of risks assumed and uncertainties, technological changes, changes in the methods of production and the efficiency of the management in taking appropriate decisions and their timely execution.

Thus, the success of business enterprises is identified with the amount of income earned and its impact on their wealth. Increase in the income of an undertaking at higher rate may result in increase in its wealth and gain the confidence of owners and investors. It also helps in improving the credit worthiness in the market and keeping the concern at high esteem. Income measurement is one of the basic tasks of accounting department.

After the economic liberalization the barriers of trade, commerce and industry are removed and the entire world is now considered as a global village. Business enterprises can spread their operations any where in the world, hitherto confined with either local or national levels. They can raise the required financial resources from any where in the world and market their products in any country. The information reported to the various parties in the form of financial statements particularly income statement plays a pivotal role in gaining confidence of the concerned, all over the world. Income statement should reflect valid, trust worthy, transparent and consistent information. This is possible only when measurement of income takes place on the basis of accepted concepts, uniform measurement criteria and generally accepted accounting principles.

4.1 ACCOUNTING CONCEPT OF INCOME

Accounting income is the excess of revenues realized over related expired costs of an accounting period. According to Beikaoui, A. "Accounting income is the difference between the realized revenues arising from the transactions of the period and the corresponding historical costs. It is the increase in the resources of a business or other entity which results from the operations of the enterprise. According to this concept the transactions of a period entered into with third parties in its operational activities have to be measured to identify realized revenues and related historical costs of the period. In the process of doing so, it follows Generally Accepted Accounting Principles such as the revenue principle, historical cost principle, matching principle and accounting period concept. In addition it also follows Accrual concept, entity concept, going concern concept and consistency convention.

Computation Procedure of Accounting Income

Computation procedure of Accounting Income generally involves four steps. They are:

- i) **Defining the particular accounting period:** The performance of business undertaking in terms of income must relate to a particular period. Hence it needs defining of a period for computation of accounting income. It is customary that many of the business undertakings prepare their income position once in a year. Hence the commonly accepted accounting period is either calendar year or natural business year. In any case the accounting period should coincide with operating cycle of the business undertakings. The operating cycle of some undertakings is more than one year such as natural herbs, crops, construction contracts etc. In such cases the accounting period for computing income may be more than one year.

items to specific time periods and using matching concept. For example provision of depreciation is a method of allocation of fixed asset based on the preferences of the accountant. Greater flexibility is involved in it.

- iii) Costs are incurred at different points of time whereas revenues are recorded at current prices. Hence profits include holding gains during the periods of inflation and dividend declaration some times may take place out of capital.
- iv) During inflationary period replacement of assets is not possible with the help of provision made for depreciation. This happens on account of providing depreciation on the basis of historical cost of the asset in spite of the fact that its replacement cost has gone up due to inflation.

Activity - 1

The total sales of Progressive Ltd., for the year 2003-2004 was Rs.5,40,000. Direct material cost of sales was Rs. 3,20,000, direct labor cost was Rs.80,000, Factory overheads such as depreciation etc., were Rs. 40,000 and distribution of dividends at the end of the year was Rs.10,000. What are the related expired costs of sales and what is the income as per the accounting concept of income? Explain the reasons for excluding any item from computation of accounting income.

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4.3 CONCEPT, RECOGNITION AND MEASUREMENT OF REVENUES

Concept of Revenue

Business organizations take up productive or trading or service activities with an objective of earning profits by selling goods and services to the public. Provision of goods and services results into either inflow of cash or increase in assets and increase in net worth of the share holders. If goods are sold on cash, increase in cash takes place on account of cash inflow. On the other hand, if goods are sold either on credit basis or for exchange of assets, increase in assets takes place on account of either increase in debtors or increase in assets with which the goods are exchanged. These inflows, which are in the form of either cash or increase in debtors or receivables or other assets from sale of goods and services, are known as revenues. Thus "revenues earned result into inflows and gross increase in the value of assets and capital of business entity and out flows of goods or services from the firm to its customers". (Jawaharlal).

Inflows may take place on account of sale of goods and services (main activity of the business) and other incidental activities such as sale of fixed assets and investments. Even inflows from sale of fixed assets and investments also result into change in assets and net worth of the firm. Hence, there are divergent views about the concept of revenue. Broadly there are two points of view about the concept of revenue viz., Broader Concepts of revenue and Narrower Concepts of revenue.

Broader Concept of Revenue

Broader concept of revenue is advocated by the American Institute of Certified Public Accountants (AICPA). According to this view revenues include all of the inflows from main

- iv). All these inflows are related to a particular accounting period.
- v) These inflows may either in the form of cash, receivables or in the form of settlement of liabilities.
- vi) Revenue is measured on the basis of charges made to customers or clients for the goods and services provided.

The following items are excluded from the scope of revenues under the narrower concept:

- i) Realized gains from disposal of and un realized gains from holding of non current assets such as fixed assets.
- ii) Unrealized holding gains from current assets such as inventory, natural increase in the herds, and agriculture and forest products.
- iii) Realized or unrealized gains from the changes in rates of foreign exchange transactions.
- iv) Realized gains from discharge of an obligation at less than book value.
- v) Unrealized gains resulting from the restatement of the book value of an obligation.

The narrower concept of revenue is useful to the outsiders and also to the management in decision making. In practice both approaches are being followed.

Revenue recognition criteria

Revenue earning is a continuous activity through out the operating cycle and life of any business undertaking. Hence, accountants quite often face with the problem of timing of recognition and recording of a revenue transactions in the books of accounts. The problem is whether to record a revenue at the time of completion of production, receiving of cash from sales, time of transfer of titles to the buyer, time of entering into agreement etc. Based on the nature of the business enterprises and socio economic changes that are taking place in the society some criteria are developed for recognizing the revenues which are discussed below.

i) Revenue recognition at the point of sale

Many manufacturing and trading concerns adopt the criteria of recognizing revenue at the time of sale and record in books of accounts. International Accounting Standards Committee and Indian Accounting Standards Committee recognized point of sale method as appropriate one for recognizing revenues. As per Indian Accounting Standard 9 (AS-9), revenues relating to trading activity are to be recognized and recorded on the basis of point of sale method. According to AS-9, revenue from sale of goods is recognized when the seller transfer the goods to the buyer for a consideration. Sale is performed if-

- i) The seller of goods has transferred the property in the goods to the buyer for a price or all significant risks and rewards of the ownerships have been transferred to the buyer; and
- ii) The seller retains no effective control of the goods transferred to a degree usually associated with the ownership;
- iii) There is no significant uncertainty as regards the consideration to be derived from the sale of goods.

- the amount of revenue can be measured reliably
- it is probable that economic benefit will flow to the enterprise
- stage of completion at the balance sheet date can be reliably measured
- costs incurred upto the stage of completion and costs to be incurred for completion of the service can be reliably measured.

According to this method, if contract price is Rs 10,00,000 and at the end of the first year 30 per cent work is certified by an architect, The revenue to be recognized shall be 30 per cent of Rs. 10,00,000 which is equivalent to Rs. 3,00,000. This method facilitates to spread the income of the total project over its accounting periods and enables the interested parties like investors, shareholders etc to know about the performance of the enterprises. It also enables the management to evaluate their policies and take corrective action.

b) Completed contract method

Under completed contract method, revenue is recognized after performance of the agreed work and final approval of the project by the customer and the rights in such project are transferred to him. Thus under this method the revenue recognition of incomplete contracts is deferred till its completion. All the expenditure incurred on contract will be carried forward as work in progress and all the amounts received from the contractee are carried forward in the his account as liability till the completion of contract. This method is suitable for such contracts which consist of single activity or multi activity service final stage of which is only significant. The main difference between the two methods is that in percentage completion method the total revenue is recognized spreading over the number of years, whereas in completed contract method it is recognized at the end of the completion of the contract.

iv) Revenue recognition in installment credit sales

In installment credit sales, the rights in goods are transferred on a particular date whereas cash collection takes place over many years. Many a time outstanding dues from customers may become bad debts. Under point of sale method, it requires to recognize total sale as revenue at the time of transferring the rights in goods to customers and provision has to be for doubtful debts as suppliers are uncertain about collection of installments. Businessmen feel it unnecessary exercise. Hence, they prefer to recognize revenue under installment sales on cash collection basis. Under this method, whatever amounts are collected from the debtors towards installments in every year are treated as revenues of that year. At the time of sale, the total sale consideration is not recognized as revenue. Only the down payment is considered as revenue of that accounting year.

v) Revenue Recognition using production method

In some cases when sale of output is assured due to forward contract, government assurance or any such thing, the practice is to recognize revenue at the completion of out put. This fact was also was recognized by ICAI and stated in its AS-9 as follows;

“At certain stages in specific industries, such as when agricultural crops were harvested or mineral ores have been extracted, performance may be substantially prior to the execution of the transaction generating revenue. In such cases where sale assured under forward contract or a government guarantee or where market exists and there is a negligible risk of failure to sell, the goods involved are often valued at net realizable value. Such amounts, while not revenue, are sometimes recognized in the statement of profit and loss and appropriately described.”
Some of the Indian fertilizer companies entered into forward contract with government for

- ii) **Sales Returns and allowances:** After the sale, customers may return the goods for various reasons such as inferior quality, damaged stock etc. In such cases the value of revenue recognized should be equivalent to total sales less value of goods returned and allowances. However, care must be taken that the goods returned relate to the sales made during the period so that the matching principle may be satisfied.
- iii) **Sales tax:** Sales tax is an indirect tax which the seller collects as a percentage of sales and remits to the government. There is no uniformity in accounting for sales tax. In most of the cases the value of sale is recognized net of sales tax. However some companies prefer to present sales on gross basis and sales tax paid is considered as expense.

4.4 CONCEPT, RECOGNITION AND MEASUREMENT OF EXPENSES

Concept of Expenses

Expenses are also known as expired costs. They are the resources used or given up or sacrificed for earning revenues and expressed in monetary terms. A manufacturing firm uses material, labor, other direct services for producing a product. In addition it also uses indirect services such as office and administration, selling and distribution for pooling up of resources and also to sell the goods produced. If all these resources given up or sacrificed to produce goods and to get them sold in the market for getting revenues are expressed in monetary values, they are known as expenses. Expenses may be incurred in cash or on credit basis. For example material, labor, services such as administrative, selling and distribution etc., may be acquired by giving up cash i.e. on cash basis or on credit basis i.e. accepting to pay for such resources after some time. Thus when such resources are acquired either on cash basis or on credit basis, expressed in monetary value and used in the process of output are known as expenses. These expenses include costs of assets consumed or services used during an accounting period. Depreciation on plant and equipment, salaries, rent office expenses, costs of heat, light power and other utilities etc., are the examples of expenses. Expenses result into either decrease in assets or increase in liabilities.

Thus expenses can be defined as "out flow of cash at the time of incurrance or agreed to pay after some time for the resources used in the process of producing output and sale of such output for getting revenues resulting into either decrease in assets or increase in liabilities." The broad features of expenses include the following:

- i) Expenses are resources used up in the process of getting revenues. They include material, labor, assets consumed in the process of output (depreciation etc.), services used in administration, office, selling and distribution.
- ii) They are expressed in terms of monetary values.
- iii) They result into either increase in liabilities or decrease in assets.
- iv) At the time of acquisition, normally the resources are known as assets. When they are used in the process of generating, the monetary values of assets used are known as expenses. Thus expenses are expired costs.
- v) The expenses include costs directly associated with the revenues of the period, costs associated with the period on some basis and costs that cannot be associated with any other period.

except those that result from revenues or investments by the owners. Losses are decrease in net assets or equity from incidental or peripheral transactions, all other transactions and events and circumstances affecting an entity during a specified period except those that result from expenses or distribution to owners. Thus, the gains and losses are not directly concerned with the main or prime activity of entities. Examples of gains and losses are gain on sale of fixed assets, loss on sale of fixed assets, loss on account of fire accident, gains or losses on sale of temporary investments, gain or loss on foreign currency devaluations etc. The following are the features of gains and losses:

- i) Gains and losses take place from incidental and peripheral activities and not from revenue generating activities. They may also take place from the environment that may be beyond the control of the undertaking and management. They are many and not alike.
- ii) Gains and losses may be classified source-wise:
 - a) Some gains and losses take place on account of comparing proceeds and sacrifices. For example, when investments are sold if proceeds are more than the amount invested on it (sacrifices) it is known as gain and if proceeds are lesser than the sacrifices made, the difference is known as loss. Other examples are disposition of used equipment, settlement of liabilities at other than carrying values etc.
 - b) Some gains and losses take place from non-reciprocal transactions between the enterprise and outsiders other than owners. Examples are thefts, fines, damages, compensation in law suits, gifts and donations etc.
 - c) Some gains and losses takes place from changes in the values of assets that were in possession of the firm (holding of assets). It takes place when such assets are revalued as per the Standards. Examples are valuation of inventory following the standard book value or realizable value which ever is lower, valuation of marketable securities to project the assets value at market situation etc.
 - d) Some other gains and losses result from environmental factors. Examples are destruction of property due to earthquakes, fire accidents, obsolescence due to technological changes.
- iii) They may be further classified as operating and non-operating depending on their relation to the earning activities of the enterprise. Based on accounting standard if inventory values are written off to realizable value then the loss is considered as operating loss as, it is relating to revenue generating activity of the concern. Excess of inflows over investment on account of disposal of segment results in gains and they are considered as non operating gains since they maintain no relation with the revenue producing activities.

Recognition of Gains and Losses

Gains and losses have to be recognized following the principle of Realization. Normally, they are recognized only when sale or exchange takes place. They may be also recognized based on the changes in the market values. This principle is followed in the case of current assets particularly inventory. In the case of fixed assets, unless it is confirmed that the market changes are permanent or for a fairly longer period the gains are not to be recognized.

the assets can be derived over the period of one year, they are known as fixed assets. If the potential use is confined to current operating period or one year whichever is higher, it is known as current asset. The assets which cannot be seen, present in the firm and provide potential benefit for more than one year are known as intangible assets. Expenditure incurred is of capital nature or losses incurred for raising capital which are to be written off over many years are shown as assets in the books of accounts. Their presence is fictitious in nature; hence they are called fictitious assets.

Concept of Liabilities

According to FASB "Liabilities are probable future sacrifices of economic benefits arising from present obligations of a particular entity to transfer assets or provide services to other entities in the future as a result of past transactions and services. According to ICAI, Liabilities are "Financial obligation of an enterprise other than owners funds". The characteristics of liabilities are:

- i) **Occurrence of a past transaction or event:** Unless some past transaction or event takes place liability will not take place. Past transactions include acquisition of goods and services, assets, services on credit basis. Some times obligation arises on account of non-reciprocal transfers such as payment of taxes etc. The occurrence of specified events results in a liability e.g. bank loan with the condition that once in 3 months interest has to be paid. As the time passes, an obligation may arise for paying the interest.
- ii) **Liability leads to sacrifice of assets in future:** To settle the liability, enterprises have to transfer assets, provide services. The liabilities, which are shown in balance sheet, require an enterprise to sacrifice assets in future. Accounts payable, wages outstanding, long-term debt, interest and dividends payable etc., have to be settled by payment in the form of cash.
- iii) **Liabilities cause proceeds to the business enterprises:** Liabilities are created on account of receiving cash, goods or services, which is often called proceeds. If proceeds result from cash transaction like sale of goods, sale of fixed assets, they cannot be taken as liabilities. If proceeds take place creating obligation of future foregoing of asset it can be taken as liability for e.g. Debenture sales result into proceeds to the organization and create obligation on its part to redeem the same after specified period. Here the liability means a legal, equitable or constructive obligations to sacrifice economic benefits in the future.
- iv) **Discontinuance of liability:** Liability can be discontinued only when it is satisfied in another transaction or other event or circumstances affecting the enterprise. Most liabilities are satisfied by cash payments and others are satisfied by transferring assets. Some time liabilities are eliminated for forgiveness, compromise or change in circumstance.
- v) **Ownership funds and dividends on capital:** Ownership funds i.e. shareholders funds are not regarded as an external liability. However, if dividends are declared on paid up share capital, payment of dividend becomes an obligation on the part of the company and hence treated as current liability.

Classification of Liabilities

Liabilities are external obligations, which can be classified as long term liabilities and current liabilities. If a liability is required to be settled after one year of its creation, it is known

4.7 METHODS OF VALUATION OF ASSETS AND LIABILITIES

The methods of valuations of assets and liabilities, which are in popular use, include the following:

- a) Historical Cost
- b) Current entry price or replacement cost in units of money
- c) Current exit price or net realizable value in units of money
- d) Present value of expected cash flows
- e) Combination of different valuation methods

These valuation methods give different meaning and different financial statement for the same information. Some of them focus on past and some other paying attention on the future. Historical cost focuses on the past, replacement cost and net realizable value focus on the present and present value of future inflows focuses on the future. Historical cost and replacement cost is related to acquisition of assets or the incurrance of liabilities, while net realizable value and present value relate to the disposition of assets or the redemption of liabilities. These methods may also be classified based on the nature of event originating the measure. Accordingly historical cost is based on actual event, present value on expected event and replacement cost and net realizable value on hypothetical events.

Every method of valuation has its own merits and limitations. Historical costs basis of valuation has been the most common valuation concept in traditional accounting practice. When transaction takes place financial accounting records them in the books of accounts on the basis of historical costs i.e. at the acquisition costs. Therefore cost is the exchange price of goods and services. Cost is the economic sacrifice expressed in monetary terms required to obtain a specific asset or group of assets. This concept of valuation provides consistency in financial positions and satisfies the going concern concept of the accounting. The prime limitation of historical cost valuation is that it fails to reflect the current value as the purchasing power of money changing day by day. On account of this concept, recognition of gains and losses are permitted in the periods in which they have not taken place.

Current entry price or-current replacement or the current costs represent the exchange price that would be required today to obtain the same asset or its equivalent. For presenting the impact of inflation on an enterprise this valuation basis in accounting assumes importance. In exchange of non-monetary assets and in determining the present value of capital lease for the lessee this method of valuation is used. The important limitation of this method of valuation is estimation of replacement costs. It is practically impossible to estimate the replacement of cost of any asset of similar clarity, form, nature, efficiency etc.

Current exit price refers the amount of cash that could be obtained by selling each asset under conditions of orderly liquidation. The current cash is relevant because it represents the position of the firm in relation to its adaptive behavior to environment. The current cash equivalent avoids the limitations of the valuation methods relating to past and future and shows present financial position. One of the limitations of this method is, if any assets' current exit price is nil it is to be excluded from position statement. There may be many assets, which are shown at historical cost in balance sheet, may not have any value today as per this concept, hence find no place in the balance sheet. This concept does not take into consideration the relevance of financial statements information for decision needs of the users.

ii) Investments

If investments are held for more than one year they are in the nature of fixed assets. They are recorded at their cost of acquisition and if any substantial decrease in value takes place it may be written off against current income. Appreciation in the value of long-term investment is recognized only when they are realized at realizable value.

iii) Current assets

Current assets are potential services which are expected to be converted into cash or consumed in the production of goods or rendering of services in the normal course of business within an operating cycle or 12 months whichever is higher. Current assets include cash, receivables, marketable securities, inventories, prepaid expenses etc. As per Indian Accounting Standard, Current assets are valued at combination of valuation methods. Receivables are shown at their face value with required reduction for un-collectable accounts and un-earned interest reported in adjacent contra accounts. For un-collectables proper provision has to be made on the basis of some appropriate method.

iv) Marketable securities

Marketable securities represent temporary investments made with the help of surplus current funds. They are recorded on the basis of cost or market value whichever is lower. If market value is lesser than cost they have to be shown at market value and the difference between market value and cost of marketable securities has to be charged to income statement.

v) Inventories

Inventories include: a) items which are used in the process of production b) Items which are held for sale in the ordinary course of business c) Inventories in the form of work in progress. The cost of inventories include all expenditure that were incurred directly or indirectly to bring an item to its existing condition or location. As per Accounting Standard-2, inventory should be valued at lower of historical cost and net realizable value. For this purpose, each item in the inventory may be dealt with separately. The historical cost of inventories should normally determined by using FIFO method. If the realizable value of inventory is lower than the historical cost, while preparing the income statement, realizable value of inventory is taken into account to determine the income. This results into decrease in the income of the concern.

vi) Intangible assets

Intangible assets include goodwill, patents, copyrights, trademarks, franchises and licenses know-how, etc. They may be acquired by purchasing from outside at an agreed price or developed internally. Though they are not directly used in the main activity of the concern, their presence is essential to carry out the activity. Hence, amortization of intangible assets using proper criteria is an essential aspect in income determination. In order to have a uniform practice in all the business undertakings Accounting Standard-10 of ICAI has given guidelines for treatment of intangible assets.

If intangible assets are purchased, they are to be recorded at cost. If they are developed internally, they have to be recorded at registration and legal costs. The cost of intangible assets has to be amortized over their legal term of validity or over their working life whichever is shorter. This provision is included with an intention to match the revenues with that of related cost of expired life of intangible assets. As per this provision, as long as the legal life and working life of intangible assets remain the same, no impact will be there on income

effluxion of time or obsolescence through technology and market changes. Depreciation is allocated so as to charge a fair proportion of the depreciable amount in each accounting period during the expected useful life of the asset. Depreciation includes amortization of assets whose useful life is predetermined." The International Standards Committee defined the depreciation as "the allocation of the depreciable amount of an asset over its estimated useful life. Depreciation for the accounting period is charged to income either directly or indirectly." The American Accounting Association, Committee on concepts and standards, 1957 stated that "depreciation represents the decline in the service potential of long term assets, and that the decline in the service potential may be the result of physical deterioration, consumption through use, or loss in economic value because of obsolescence or change in demand." As per Financial Accounting Standards Board "wear and tear from use is known to be a major cause of expense called depreciation, the amount of depreciation caused by wear and tear is in a period normally can not be measured. Those expenses are not related directly to either specific revenues or particular periods. Usually not traceable relation exists, and they are recognized by allocating costs to periods in which assets are expected to be used and are related indirectly to the revenues that are recognized in the same period. Thus the causal relationship cannot be specifically identified and relationship to benefit is only indirect." On the basis of above definitions the following can be observed as features of depreciation:

- i) Depreciation is a decline in the service potential of depreciable assets. The assets, which are expected to be used during more than one accounting period, have a limited life and are held by an enterprise for use in production or supply of goods and services for rentals to others, or for administrative purposes and not for the purpose of sale in the ordinary course of business are known as depreciable assets.
- ii) Decline in the service potential may be the result of physical deterioration, consumption through use, or loss in economic value because of obsolescence or change in demand. Decline in the service potential if measured in value it is known as depreciation. It is the expiration or disappearance of service potential from the time the depreciable asset is put to use until the time it is retired from service. Normally, no differentiation is made between physical deterioration and obsolescence for amount of depreciation.
- iii) Depreciation is decided not on the basis of any valuation method but it is a process of allocation over the life of the depreciable asset and is charged to income statement to calculate the net profit or loss of the business. This can be evinced from the definition of AICPA "Depreciation is system of accounting which aims to distribute the costs ... of tangible capital assets, less salvage if any over the estimated useful life of the unit in a systematic and rational manner. It is a process of allocation, not of valuation." Allocation of cost of tangible assets over its useful life is known as depreciation, allocation of the cost of the natural resources (timber, oil and coal) over its life is known as depletion and the expiration of intangible assets (patents goodwill) is called amortization.
- iv) Depreciation is the result of an accounting process of allocating the cost of tangible assets as expense in a systematic and rational manner to those periods expected to benefit from the use of the asset. The changes in the value of the assets are not considered in deciding the depreciation as business enterprises follow going concern principle, cost principle and matching of revenues with that of related expired costs.

Hence, experience and judgment of accountants are the primary means of determining service lives of depreciable assets. Some times arbitrary and some other times fairly statistical methods are applied to establish a useful life for accounting purposes. In many cases enterprise past experience is being taken into account. The determination of useful service life of an asset could have significant implication regarding estimation of salvage value and the resulting depreciation base for the asset. This may necessitate a revised estimate of the useful life of an asset after a period of usage. According to "Accounting Standard – 6", when the original estimated useful life is revised, the unammortised depreciable amount of the asset is charged to revenue over the remained useful life of the asset.

Activity - 4

Purity Tech Ltd. purchased five computers for Rs.2,50,000. The scrap value (after its estimated life of five years) is estimated as Rs.10,000. Find the depreciable value of the asset? And also calculate depreciation for five years assuming that the company used the computers equally during their life period.

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4.11 METHODS OF DEPRECIATION AND INCOME DETERMINATION

4.11.1 METHODS OF DEPRECIATION

Apart from the above two factors, the method of depreciation selected also influences in the determination of depreciation. The accounting profession recognizes that the depreciation method applied should be systematic and rational so as to satisfy matching principle, the going concern principle and concept of periodicity. Any subjectivity in selection of the appropriate method of depreciation, given the depreciation base and useful life of an asset, results in either over statement or under statement of incomes and assets. Depreciation method are broadly classified as follows:

- i) Straight line method
- ii) Activity (Units of use or production) method
- iii) Decreasing charge (Accelerated / Written Down Value) method.

Straight-line method

Under straight-line method a constant amount is written of as depreciation every year over useful life of the asset. This method assumes the depreciation as the function of the passage of time. Further it assumes that the asset's usefulness remains the same every year.

Under this method annual depreciation is calculated as shown below.

Annual depreciation = $\{(\text{Original cost} - \text{estimated salvage value}) / \text{Estimated useful life}\}$

For example, if the cost of machinery is Rs. 1,10,000, estimated salvage value is Rs.10,000 and estimated useful life is 5 years. The annual depreciation is equivalent to: $\{(1,10,000 - 10,000) / 5\}$ Rs. 20,000.

Though this method assumes that the assets' annual usage over its life is same, in practice it may not be true on account of many reasons. Hence, it deviates from matching principle

cally the asset's life and sum their arithmetical progression. Then use the highest number in the series as numerator and the sum of the series as the denominator of a fraction that is multiplied by cost (less salvage) of the asset. For each subsequent year, use the next lower number in the series: in this way the fraction decreases each year. This can be understood with the following illustration.

Assume value of machinery as Rs. 1,32,000; estimated salvage value Rs 6,000; estimated life 6 years.

$$\text{Sum of the years digits (6 years)} = 1+2+3+4+5+6 = 21$$

$$\begin{aligned} \text{1st year depreciation} &= 6/21 \times (1,32,000 - 6,000) \\ &= \text{Rs } 36,000 \end{aligned}$$

$$\begin{aligned} \text{2nd year depreciation} &= 5/21 \times (1,32,000 - 6,000) \\ &= \text{Rs } 30,000 \end{aligned}$$

$$\begin{aligned} \text{6th year depreciation} &= 1/21 \times (1,32,000 - 6,000) \\ &= \text{Rs } 6,000 \end{aligned}$$

The machinery would be shown on the balance sheet at the end of 2nd year as Rs. 66,000 (Rs. 1,32,000 - 66,000 (Accumulated depreciation))

c) Double declining Method

In this method also depreciation charge remains higher during the earlier of assets life. It applies constant rate of depreciation. However the rate is twice the straight-line rate under straight-line method of depreciation. It can be understood with the following illustration.

Example: The value of machinery as Rs. 1,32,000 estimated salvage value Rs 6,000, estimated life 6 years.

$$\text{Straight line rate of depreciation} = 1/6$$

$$\text{Rate of depreciation under Double Declining balance Rate} = 1/6 \times 2 = 1/3$$

$$\text{1st years depreciation} = \text{Rs. } 1,32,000 \times 1/3 = \text{Rs. } 44,000$$

$$\text{2nd years depreciation} = (\text{Rs. } 1,32,000 - 44,000) \times 1/3 = \text{Rs. } 29,333 \text{ (Approx.)}$$

At the end of the 6th year following the same analogy the depreciation would be Rs. 5794.2 and the scrap value would be Rs. 11,588.

Thus the following observations can be made about methods of written down value of depreciation:

- i) The book value of the asset never reaches zero.
- ii) The rate of depreciation is applied on the book value of the asset at the end of the previous year.
- iii) The rate is applied to the original asset balance and no salvage is deducted as is done in other methods

The following are some of the benefits available to business enterprises if they use accelerated methods of depreciation.

value. The goal of the firm in selecting depreciation method for tax purpose should be to maximize the present value of the reductions in tax payment from claiming depreciation. Since depreciation is tax deductible, profit making firms prefer to go for more depreciation rather than pay tax. Accelerated methods of depreciation thus help the business undertakings.

- ii) **Financial Reporting:** One of the objectives of financial reporting is to depict true and fair view of financial position. This necessitates allocation of depreciation as fairly as possible to the periods expected to benefit from the use of the asset and should select the method regarded as more appropriate to the type of asset and its use in the business. Hence, while selecting depreciation methods, managements have to take care of their obligations in financial reporting. There is a need to choose the method of depreciation based on realistic estimates of life of the asset and estimated scrap value so as to balance between fulfilling the obligations of financial reporting and showing better performance of undertakings.
- iii) **Effect on Managerial Decisions:** Selection of appropriate method of depreciation, calls for the attention of considerations of the needs of managerial decision making. There is a relation between the method of depreciation selected and its impact on cash flows of the undertakings. Depreciation cost may be either a differential cost or sunk cost. Future costs and differential costs are relevant costs of the decision to invest capital in productive assets. However, the carrying amount of existing assets (sunk cost that cannot be changed in short run) is an irrelevant factor is ignored except for income tax consideration.

Effects of depreciation on cash flows are to be considered for managerial decisions. Expected rate of return becomes base for investment decisions. In computation of the rate of return net cash flow from the investment generally is a more meaningful concept than net income from the investment. Depreciation expense, neither generate nor reduce cash directly, but deducted to calculate taxable income. Thus depreciation expense indirectly generates cash flows from operations by reducing income taxes. Hence it is viewed as powerful instrument in speeding up cash flows and reducing the pay back period.

- iv) **Inflation:** In recent years inflation is taken as a major consideration in selecting the appropriate method of depreciation. On account of inflation, the accumulated depreciation provided on the basis of historical costs, is inadequate to replace the fixed assets. This means that business enterprises eat into the assets faster than the rate of depreciation as the cost of replacing the asset is increasing. Accelerated methods of depreciation help in accumulating larger amounts of depreciation which increases the replacement capability of business enterprise.
- v) **Technology:** This is the age of rapid technological advancement and also obsolescence in depreciable assets. Hence, it is essential to preserve the capacity by providing for appropriate depreciation to replace the assets. In the periods of rapid obsolescence it is essential to estimate life of the assets as shorter as possible and provide depreciation. There are some assets like computers, which are being depreciated now a days over a period of three years. Technological progress as a dimension of depreciation has become more important than the engineering life of the machines. The rate of depreciation should be sensitively related to the fluctuations in earnings of undertakings. Other wise it leads to over tax and consequently it will not be able retain adequate profits to replace the assets in the periods of adversity.

4.13 SUMMARY

Income is one of the prime factors taken into consideration for making economic decisions by many who are concerned with the business enterprises. Its significance has gone up due to globalization of business and international movement of capital. Hence, it should be measured on the basis of appropriate concept of income, acceptable for all the users of income statement. Different concepts are prevalent for measurement of income. They include Accounting concept of income, Economic Concept of income, capital maintenance concept of income, Business income concept, Comprehensive concept of income, Events approach to income, transactions approach to income, activity based income etc. As per accounting concept, income is the excess of expired related costs over realized revenues of accounting period. It is arrived after deducting the related expired cost of revenue from the revenues realized during the period. This concept is based on cost, realization, entity and going concern principles.

“Revenues earned create inflows and gross increase in the value of assets and capital of business entity and outflows of goods or services from the firm to its customers. Broadly there are two points of view about the concept of revenue viz., Broader concept of revenue and Narrower concept of revenue. As per broader concept, revenues include all of the inflows from main and incidental activities of the business. Thus, its scope includes inflows from sale of goods and services, and other gains and losses on account of sale of fixed assets and investments. As per the narrower concept, revenues include inflows from the main activity of the business such as proceeds from goods and services but not other inflows as stated in broader concept of revenue. As per Indian Accounting Standard 9, revenues relating to trading activity are to be recognized and recorded on the basis of point of sale method. According to AS-9 the revenues are to be recognized when the rights in goods are transferred to the buyer and certainty is there about the consideration to the sale. Apart from this, there are certain other methods of recognition of revenues. They include percentage completion method, completed contract method, cash collection basis (followed in installment sales), completion of production method etc. While valuing revenues adjustments have to be made for sales returns, discounts on sales, sales tax etc. The value of revenue is equivalent to consideration agreed by the seller and purchaser in the cash sales. In the case of sales based on the exchange of consideration other than cash, the value of sales revenue is equivalent to the fair value of asset taken from the buyer or cash price of it, whichever is more clearly determinable, plus any additional cash collected from him. If goods are sold on credit basis the agreed price should be taken as sales revenue. Some times goods may be sold on installment basis. In installment sales, the buyer may pay, not only the cash price, but also something extra as interest over the agreed period of time. In such situation revenue is equivalent to cash price only and interest portion has to be recognized as income in profit and loss account.

Expenses can be defined as “outflow of cash at the time of incurrence or agreed to pay after some time for the resources used in the process of producing output and sale of such output for getting revenues resulting in either decrease in assets or increase in liabilities.” Gains are increases in equity or net assets from incidental or peripheral transactions, all other transactions and events and circumstances affecting an entity during a specified period except those that result from revenues or investments by the owners. Losses are decrease in net assets or equity from incidental or peripheral transactions, all other transactions and events and circumstances affecting an entity during a specified period except those that result from expenses or distribution to owners. Thus the gains and losses are not directly concerned with the main or prime activity of entities. Examples of gains and losses are gain on sale of fixed assets, loss on sale of fixed assets, loss on account of fire accident etc. Gains and losses have to be recognized following the principle of realization. Normally, they are recognized only when sale or exchange takes place. They may be also recognized based on the changes in the market values. This

4. Depreciable value of computers = Cost of computers – estimated scrap value
 = Rs.2,50,000 - Rs.10,000 = Rs.2,40,000.

Assuming the company used the computers equally the yearly depreciation is equal to depreciable value divided by estimated life. Rs.2,40,000/5= Rs.48,000.

5. Depreciation as per straight-line method = (Rs.5,20,000- Rs.20,000)/5years.
 = Rs.1,00,000.

Depreciation for five years as per sum-of-years-digits method:

Sum of the years digits(five years) = 5 + 4 + 3 + 2 + 1 = 15

First year's depreciation = $1/15 \times (\text{Rs.}5,20,000 - \text{Rs.}20,000)$
 = Rs.33,333.33

Second year's depreciation = $2/15(\text{Rs.}5,20,000 - \text{Rs.}20,000)$
 = Rs. 66,667.

Third year's depreciation = $3/15(\text{Rs.}5,20,000 - \text{Rs.}20,000)$
 = Rs.1,00,000..

Fourth year's depreciation = $4/15(\text{Rs.}5,20,000 - \text{Rs.}20,000)$
 = Rs.1,33,333.33..

Fifth year's depreciation = $5/15(\text{Rs.}5,20,000 - \text{Rs.}20,000)$
 = Rs.1,66,667

6. Since the usage of car is measured in terms of number of kilometers run, the appropriate method of depreciation may be activity method or variable charge method.

Life of the car in terms of number of kilometers to be run, and yearly kilometers of run for eight years are required for calculating depreciation under this method.

4.15 SELF ASSESSMENT QUESTIONS

A. Short Answer Questions

1. What are the prime objectives of measurement of net income?
2. Define Accounting Concept of Income.
3. Define Revenue. Explain features of revenue.
4. What do you mean by narrower concept of revenue?
5. What do you mean by broader concept of income?
6. What do you mean by point of sale method of recognizing Revenue?
7. State the features of percentage completion method.
8. What are the features of expenses?

12. What do you mean by intangible assets and how are they valued?
13. "Income determination depends on the concept of valuation of assets applied." Discuss.
14. Define liabilities state the difference between current and long term liabilities and the method of their valuation.
15. "Depreciation is a allocation of cost or other value over the service life of an asset in a systematic and rational pattern". Explain.
16. "Several methods of depreciation have been suggested and used from time to time that result in a decreasing depreciation charge over the expected life of an asset". Explain these methods.
17. Distinguish between "Declining Balance" and "Double Decline Balance" methods of depreciation. Which of these methods is recognized for financial reporting purposes in India.
18. "Different assets are shown in the balance sheet are valued at differently". In the context of this statement explain the asset group and methods of valuation highlighting reasons thereof.
19. Why business resort to revaluation of fixed assets for financial reporting purposes? Does it influence income measurement?
20. Explain the impact of different methods depreciation on the income determination.

4.16 FURTHER READINGS

1. Accounting Standard - 6 : **Depreciation Accounting**, The Institute of Chartered Accountants of India, New Delhi.
2. A.C. Littleton : **Structure of Accounting theory**, American Accounting Association, 1988.
3. Robert S. Kaplan Anthony A. : **Advanced Management Accounting**, Pearson Education, New Delhi.
4. R.K. Sharma and Shashi K Gupta : **Management Accounting-Principles and Practices**, Kalyani Publishers, New Delhi.
5. J.R,Hies : **Value and Capital**, Clarendon Press, 1946.
6. Elden S, Hendriksen : **Accounting Theory**, Homewood, Richard D. Irwin, 1984.
7. S..S. Alexandar : **Income Measurement in Dynamic Economy**, London, Sweet and Maxwele, 1962.
8. Allen Barton : **An Analysis of Business Income Concepts**, International Center for Research in Accounting, University of Lancashire, 1975.
9. T.P. Ghosh : **Accounting Standards and Corporate Accounting Practices**, Taxman's Publications, New Delhi.

Intangible Assets	: Assets that cannot be seen or visualized, present in the firm and provide potential benefit for more than one year, are known as intangible assets.
Fictitious Assets	: Expenditure incurred in the form of capital nature or losses incurred for raising capital which are to be written off over many number of years are shown as assets in the books of accounts. Their presence is fictitious in nature; hence they are called as fictitious assets.
Liabilities	: Financial obligation of an enterprise other than owners funds which are to be settled by sacrificing assets in future.
Long Term Liabilities	: Liabilities not due during the next year or during the normal operating cycle. Long-term liabilities become due after one year and are the liabilities, which are not classified as current liabilities.
Current Liabilities	: Liabilities required to be settled, within one year from the date of their creation. Examples of current liabilities are Bills Payable, Sundry creditor, liability for taxation, liability for expenses, liability for dividend etc.
Contingent Liabilities	: Liabilities which will arise in the future only on the occurrence of special event.
Valuation	: The process of assigning meaningful quantitative monetary amounts to assets and liabilities.
Historical Cost	: The exchange price of goods and services at the time they are acquired.
Current Entry Price	: Current entry price or current replacement or the current costs represent the exchange price that would be required today to obtain the same asset or its equivalent.
Current Exit Price	: Measures net realizable value (i.e. current exit price) in units of money.
Present Value of Expected Cash Flows	: Measures present value of future expected flows discounted at specified discount rate.
Deferred Charges	: Deferred charges are the expenses paid in advance and benefit for several future years. They include legal fees, fees paid to Government Agencies and preliminary expenses etc.

Financial statements are end products of accounting process. They are prepared following the consistent accounting concepts, principles, procedures and also the legal environment in which the business organizations operate. These statements are the outcome of the summarizing process of accounting and are; therefore the sources of information on the basis of which conclusions are drawn about the profitability and the financial position of a business enterprise. Hence, they need to be arranged in proper form with suitable content so that the users of financial statements can understand them and make use of them in their economic decisions in a meaningful way.

5.1 MEANING AND NATURE OF FINANCIAL STATEMENTS

Meaning and Features of Financial Statements

Financial statements are the basic and formal means through which the corporate management communicates financial information to various external users. Financial statements are primarily directed towards the needs of owners and incidentally to the needs of other external parties which include-investors, tax authorities, governments, employees, etc. The following definitions bring out the meaning of financial statements.

According to American Institute of Certified Public Accountants (AICPA) "Financial statements are prepared for the purpose of presenting a periodical review or report on progress made by the management and deal with the status of investment in the business and the results achieved during the period under review.

In the words of John N. Myer, " The Financial statements provide a summary of accounts of a business enterprise, the balance sheet reflecting the assets, liabilities and capital as on a certain date and the income statement showing the results of operations during a certain period".

Smith and Asburne define financial statements as "the end product of financial accounting in a set of financial statements prepared by the accountants of a business enterprise-that purport to reveal the financial position of the enterprise, the result of its recent activities and an analysis of what has been done with earnings".

In the words of Anthony, "Financial statements, essentially, are interim reports presented annually and reflect a division of the life of an enterprise into more or less arbitrary accounting period-more frequently a year."

Feature of Financial statements

The above definitions of financial statements reveal the following features:

- a) **Intended users:** The financial statements are prepared intending towards those users who have interest in the business enterprise. These financial statements are prepared with an assumption that the user is familiar with the business practices and the meaning and implications of the terms used in the business.
- b) **Reports history:** Financial statements are prepared on the basis of past financial transactions of a concern during specified period and generally report what has happened in the past. However, these statements provide basis for the future for the prospective investors and creditors in the form of estimates of future activities and its effect on income and on the equity of the investors.
- c) **Legal and economic consequences:** Since financial statements reflect the elements of economics and law, they are conceptually oriented towards economy but many of the

According to John N. Mayer, "The financial statements are composed of data which are the result of a combination of (i) recorded facts concerning the business transactions; (ii) conventions adopted to facilitate the accounting technique; (iii) postulates, or assumptions made; and (iv) personal judgments used in the application of the conventions and postulates."

The following points explain the nature of financial statements:

- i) **Recorded Facts:** Financial statements are prepared on the basis of facts in the form of cost data recorded in accounting books. The original cost or historical cost is the basis of recording transactions. The figures of various accounts such as cash in hand, cash at bank, bills receivables, sundry debtors, fixed assets etc. are taken as per the figures recorded in the accounting books. The asset purchased at different times and at different prices are put together and shown at cost prices. As recorded facts are not based on replacement costs, the financial statements do not show current financial condition of the concern.
- ii) **Accounting Conventions:** Certain accounting conventions are followed while preparing financial statements. The convention of valuing inventory at cost or market price, whichever is lower, is followed. The valuing of assets at cost less depreciation principle for balance sheet purposes is followed. The convention of materiality is followed in dealing with small items like pencils, pens, postage stamps, etc. These items are treated as expenditure in the year in which they are purchased even though they are assets in nature. The stationery is valued at cost and not on the principle of cost or market price whichever is less. The use of accounting conventions makes financial statements comparable, simple and realistic.
- iii) **Postulates:** Financial statements are prepared on certain basic assumptions known as concepts or postulates such as going concern postulate, money measurement postulate, realization postulate etc. Going concern postulate assumes that the enterprise is treated as a going concern and exists at least for a longer period of time. The other alternative to this postulate is that the concern is to be liquidated, this, is untenable if management shows an intention to liquidate the concern. So the assets are shown on a going concern basis, that is on historical cost basis. Money measurement postulate assumes that the value of money will remain the same in different periods. Though there is drastic change in purchasing power of money the assets purchased at different times will be shown at the amount paid for them. While, preparing profit and loss account the revenue is included in the sales of the year in which the sale was undertaken even though the sale price may be received in a number of years. The assumption is known as realization postulate.
- iv) **Personal Judgments:** Under more than one circumstance, facts and figures presented through financial statements are based on personal opinion, estimates and judgments. The depreciation is provided taking into consideration the useful economic life of fixed assets. Provisions for doubtful debts are made on estimates and personal judgments. In valuing inventory, cost or market value, whichever is less is being followed. While deciding either cost of inventory or market value of inventory many personal judgments are to be made based on certain considerations. Personal opinion, judgments and estimates are made while preparing the financial statements to avoid any possibility of over statement of assets and liabilities, income and expenditure, keeping in mind the convention of conservatism.

5.3 TYPES OF FINANCIAL STATEMENTS

Financial statements generally include two statements known as Income statement and Balance sheet. The prime attention of accounting process is paid on distinguishing between the revenue items from capital items. Revenue items include both revenue receipts as well as revenue payments. They are of nominal nature, hence need to be matched and net results are to be identified. The statement, which takes care of this process, is known as income statement. After matching the revenue receipts with that of revenue payments, the remaining balances are of capital nature. They include, items, which have potential uses and future obligations known as assets and liabilities. The statement, which shows total of assets and liabilities, is known as balance sheet. As per Generally Accepted Accounting Principles (GAAP), financial statements include the following;

- i) Balance sheet
- ii) Income statement
- iii) Statement changes in owners' account
- iv) Statement of changes in financial position.

The two basic or major financial statements known as balance sheet and income statement are required for external reporting and also for internal needs of the management like planning, decision-making and control. These two basic statements are supported by number schedules, annexures, supplementing the data contained in the balance sheet and income statement. Apart from these two basic financial statements, there is a need to know about movements of funds and changes in the financial position of the company. Statement of retained earnings and the statement of changes in financial position help in this direction.

i) Balance Sheet

The purpose of balance sheet is to its resources and obligations for acquiring its resources i.e assets and liabilities. According to American Institute of Public Accountants, Balance Sheet is "A tabular statement of summary of balances (debits and credits) carried forward after an actual and constructive closing of books of accounts and kept according to principles of accounting." Balance sheet is the statement prepared on a particular date and shows classified properties and assets on the right hand side and obligations or liabilities on the left hand side.

ii) Income Statement or Profit and Loss Account

The income statement is also called as profit and loss account. It is the accounting report, which summarizes the revenues, expenses and difference between them for a specified accounting period. It also represents the changes in the owner's equity between two successive periods. It is an essential statement for preparation of balance sheet and hence annexed to it. Income statement is the moving picture of an organization. It presents a longitudinal picture of the gains and losses of business. Since it reflects the results of operations for a period, it can also be called a flow statement. Income statement gives a mathematical interpretation of policies, expenses, knowledge, foresight and aggressiveness of the management of a business from the point of view of income expenses, gross profit, operating profit and net profit or loss.

As per the accounting concept of income, income is excess of realized revenues over related expired cost of the period and loss is known as excess of expired cost of a period over related realized revenues of the period. Thus profit or loss the difference between the realized revenues of the period and the related expired costs. Revenues refer to the gross inflow of cash,

flow statement. These two statements depict the causes for changes of working capital and changes in cash in the form of sources and uses between two balance sheet dates.

Activity - 2

a) What are financial statements?

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b) What do you mean by general purpose financial statements?

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5.4 FORM AND CONTENTS OF INCOME STATEMENT

Income statement may be divided into three components viz., Trading account which shows the gross profit earned, profit and loss account which shows net profit earned or net loss incurred and profit and loss appropriation account which shows all appropriations from the current year and balance of profit or loss of last year and surplus or deficit at the end of the period. If the concern is a manufacturing company, apart from above components manufacturing account is also required. The income statement is normally prepared in account form dividing it into two parts known as debit side or credit side. In the case of companies only one account known as profit and loss account is opened which in turn is divided into required number of sections namely manufacturing account, trading account, profit and loss account and profit and loss appropriation account. The simplified form and contents of Manufacturing Account, Profit and Loss Account and Profit and Loss Appropriation account are given below:

**Form and Contents of
Manufacturing Account ofcompany Ltd for the period ending.....**

Expenses	Total Rs.	Revenues	Total Rs.
To Opening stock:		By Cost of finished goods	
Raw material x x x		transferred to trading account	x x x
Work in process x x x	x x x	By Closing stock:	
To Purchase of raw material	x x x	Raw material x x x	
To Carriage inwards	x x x	Work in progress x x x	x x x
To Manufacturing wages	x x x		
To Factory rent	x x x		
To Depreciation:			
Factory building x x x			
Machinery x x x	x x x		

To Proposed dividend	x x x	
To Balance c/d.	x x x	
	x x x	x x x

Income statement may also be presented in vertical form with detailed data. Vertical form income statements are suitable for further analysis and providing suitable data for decision-making. The form and content of vertical income statement is shown below.

(Vertical Form)
Form and Contents of
Income Statement of — Company Ltd. for the year ending —

Elements of revenues and expenses	Amount Rs.	Amount Rs.
Sales		
Cash sales	x x x	
Credit sales	x x x	x x x
Less: sales returns		x x x
Net sales - (1)		x x x
Less: Cost of Goods Sold		
Opening stock	x x x	
+ Purchases	x x x	
+ manufacturing expenses	x x x	
+ Direct expenses	x x x	
	x x x	
Less: Closing stock	x x x	
Total of cost of goods sold - (2)		x x x
Gross Profit - (3)		x x x
Less: Operating expenses - (4)		
Office expenses	x x x	
+ administrative expenses	x x x	
+ Selling expenses	x x x	
+ Distribution expenses	x x x	
+ depreciation	x x x	x x x
Operating profit - (5)		x x x
Plus: Non operating income		x x x
Less: non operating expenses		x x x
Profit before interest and taxes - (6)		x x x
Less: interest charges - (7)		
Interest on loans	x x x	
Interest on debentures	x x x	x x x
Profit before tax (6-7) - (8)		x x x
Less: Provision for Tax - (9)		x x x
Net profit - (10)		x x x

<p>Secured Loans Debentures Loans and Advances from Banks Loans and Advances from Subsidiary Other Loans and Advances Un-Secured Loans Fixed Deposits Short Term Loans and Advances Other Loans and Advances Current Liabilities and Provisions A. Current Liabilities Acceptances Sundry Creditors Outstanding Expenses B. Provisions For Taxation For Dividends For Contingencies For Provident fund schemes For Insurance, pension and other similar benefits</p>	<p>Shares, Debentures, Bonds Current Assets Loans and Advances a) Current Assets Interest Accrued Stores and Spare parts Loose Tools Stock in Trade Work in Progress Sundry Debtors Cash and Bank Balances b) Loans and Advances Advances and loans to subsidiary Bills Receivable Advance Payments Miscellaneous Expenditures Preliminary expenses Discount on issue of shares and debentures Other deferred expenses Profit and Loss Account debit balance</p>
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Part (B): Vertical Form of Balance Sheet of _____ as at _____

	Schedule No.	Figures as at the end of Current financial year	Figures as at the end of previous financial year
1. Sources of funds			
1. Share holders' Funds			
a) Capital			
b) Reserves and Surpluses			
2. Loan Funds:			
a) Secured Loans			

the concern and are available for distribution as profits whereas capital reserves are not freely available for distribution as profits.

3. **Secured Loans:** Long - term loans, which are taken against security, are included under this. Debentures are included under this category. Loans and advances from banks, subsidiary companies etc, should be shown separately. It requires to show the nature of security.
4. **Unsecured Loans:** Loans and advances for which no security is given are shown under this heading. This item includes deposits, loans and advances from subsidiary companies, loans and advances from other sources. Short-term loans from banks and others also are shown in this category.
5. **Current liabilities and Provisions:** Current liabilities are such liabilities, which mature within a period of one year. They include, acceptances, sundry debtors, advance payments and un-expired discounts, unclaimed dividends, interest accrued but not paid, other liabilities etc. Provisions are the liabilities, which are created out of revenue profits and are to be adjusted within a period of one year. They include, provision for taxation, proposed dividends, provision for contingencies, provision for provident fund scheme, provision for insurance, pension and similar staff benefit schemes etc.

Assets Side

1. **Fixed Assets:** These are the assets acquired due to past transactions and whose potential uses or benefits would spread for more than one year. They are acquired with an intention of using them in the main activity not the concern but not for resale. Fixed assets include goodwill, land and buildings, lease holds, plant and machinery, furniture, railway lines, patents, livestock, vehicles etc. These assets are shown at cost less depreciation till the date.
2. **Investments:** Under this item various investments made such as investment in government securities or trust securities, in shares, debentures, bonds and in immovable properties etc, are to be shown separately in the inner column of the balance sheet.
3. **Current Assets:** Assets which, realize into cash within a period of one year, are known as current assets. Current assets include, inventories, sundry debtors, cash and bank balances, etc. and which are to be shown as per accepted accounting practices.
4. **Miscellaneous Expenditure:** The expenditure, which is not debited to profit and loss account fully and deferred for some years, is shown under this heading. These expenses include preliminary expenses, advertisement expenditure, discount on issue of shares and debentures, interest paid out of capital during construction period etc. These expenses are spread over number of years and the unwritten balances are shown in balance sheet under this heading.

Activity - 3

- a) What is the purpose of Balance Sheet?

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- viii) **Helps Trade Associations in Helping their Members:** Trade associations may analyze the financial statements for the purpose of providing service and protection to the members. They may develop standard ratios and design uniform system of accounts.
- ix) **Helps Stock Exchanges:** Financial statements help the stock exchanges to understand the extent of transparency in reporting on financial performance and enables them to call for required information to protect the interests of investors. The financial statements enable the stock brokers to judge the financial position of different concerns and take decisions about the prices to be quoted.

Activity - 4

- a) Who are the prime users of financial statements?

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- b) Explain how financial statements help the investors.

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5.7 LIMITATIONS OF FINANCIAL STATEMENTS

Though utmost care is taken in the preparation of financial statements to be useful to the users, they suffer from the following limitations;

- i) Financial statements are prepared on the basis of historical cost. Since the purchasing power of money changes periodically the values of assets and liabilities shown in financial statement do not reflect current market situation.
- ii) Net profit is ascertained on the basis of historical cost. If profits are adjusted to changing price levels, it may lead to loss and consequently dividends may be paid out of capital.
- iii) Accounting is done on the basis of certain conventions; eg: the assets are valued on the going concern basis. Some of the assets may not realize the stated values, if the liquidation is forced on the company. Assets shown in the balance sheet reflect merely unexpired or unamortized cost.
- iv) The balance sheet is prepared at a point of time and the accounting year may be deliberately chosen in such a manner that it gives favorable picture.
- v) Financial statements are the outcome of recorded facts, concepts and conventions used and value judgments made in different situations by the accountants. Hence, bias may be observed in the results.
- vi) Financial statements show aggregate information but not specific information. Hence they may not satisfy the users in decision making unless modified suitably.

5.9 MODEL ANSWERS TO ACTIVITIES

1.
 - a) Financial statements are prepared for the purpose of presenting a periodical review or report on progress made by the management and deal with the status of investment in the business and the results achieved during the period under review.
 - b) The financial statements are composed of data which are the result of a combination of recorded facts concerning the business transactions, conventions adopted to facilitate the accounting technique, postulates, or assumptions made to and personal judgments used in the application of the conventions and postulates.
2.
 - a) Financial statements include income statement, balance sheet, Statement of retained earnings and statement showing changes in financial position
 - b) Financial Statements, which satisfy the common informational needs of all the parties who are interested in the affairs of any firm are known as general purpose financial statements. The common interests include profits, financial position, changes in financial position, pattern of assets and liabilities etc.
3.
 - a) According to section 211(i) of Companies act the balance sheet shall depict true and fair view of financial position of any company.
 - b) Assets which have potential use for more than one year and which are not meant for resale in the ordinary course of business is known as fixed assets where as the assets which are realized into cash with in a period one-year and which are used in the ordinary course of business are known as current assets.
4.
 - a) The prime users of financial statements are shareholders or owners, lenders, potential investors, employees and trade unions, government etc.
 - b) Investors need information about profits, liquidity, short and long term financial solvency of the concerns to take decision about their investments. Financial statements help in providing all this information.

5.10 SELF ASSESSMENT QUESTIONS

A. Short Answer Questions

1. Define financial statements.
2. What are the underlying concepts of financial statements?
3. What is an income statement?
4. What do you mean by balance sheet?
5. State objectives of financial statements.
6. Explain the relationship between balance sheet and income statement.
7. What do you mean by general-purpose financial statements?
8. What do you mean by owner's equity?
9. What are the objectives of financial statements?

B. Long Answer Questions

1. Explain about the nature of the financial statements.

Permanency Order

- : Arranging the assets and obligations classifying in suitable groups and presenting in balance sheet in order of the period of their stay in the organization beginning with long-term assets or fixed assets and capital as first items in order and current assets and current obligations as last items.

Liquidity Order

- : Arranging the assets and obligations classifying in suitable groups and presenting in balance sheet in order of the period of their stay in the organization beginning with current assets and current liabilities as first items in order and fixed assets and capital as last items.

BRAO U

BLOCK - II : FINANCIAL STATEMENT ANALYSIS - I

This block presents an overview of financial statement analysis and discusses the techniques of financial analysis viz., comparative statements, common-size statements, trend analysis and ratio analysis. It consists of three units i.e., unit 6 - 8.

Unit 6 explains the objectives, importance and techniques of financial analysis. It also deals with the comparative statements, common-size statements and trend analysis.

Unit 7 discusses the objectives and significance of ratio analysis, and introduces different types of ratios. It focuses on various profitability ratios.

Unit 8 deals with the liquidity, leverage and activity ratios.

UNIT - 6 : FINANCIAL ANALYSIS : AN OVERVIEW

Objectives

The aim of this unit is to acquaint you with the theoretical aspects and techniques of financial analysis. It focuses on Comparative Statement, Common-size Statement and Trend Analysis.

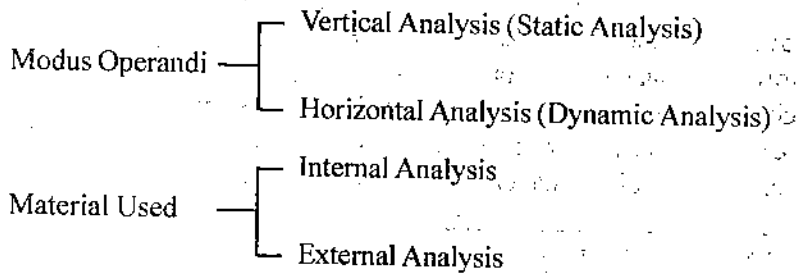
After studying this unit, you should be able to:

- explain the meaning of financial statements and their analysis;
- explain the importance of financial analysis;
- describe the techniques of financial analysis;
- state the limitations of financial analysis;
- prepare comparative and common-size financial statements and interpret them; and
- calculate the trend percentages and interpret them.

Structure

- 6.1 Introduction
- 6.2 Meaning of Financial Statements
- 6.3 Meaning of Financial Statement Analysis
- 6.4 Types of Analysis and Interpretation
 - 6.4.1 Modus Operandi
 - 6.4.2 Materials Used
- 6.5 Importance of Financial Analysis
- 6.6 Techniques of Financial Analysis
- 6.7 Comparative Financial Statement Analysis
- 6.8 Common-Size Financial Statement Analysis
- 6.9 Trend Analysis
- 6.10 Limitations of Financial Analysis
- 6.11 Summary
- 6.12 Model Answers to Activities
- 6.13 Self Assessment Questions
- 6.14 Further Readings
- 6.15 Key Words

On the basis of -



6.4.1 MODUS OPERANDI

On the basis of number of years, Financial Statements used for analysis and interpretation, the analysis may be classified into vertical and horizontal analysis.

Vertical Analysis

When the analysis of Financial Statements of an organization is made for only one accounting period, it is called as 'vertical analysis'. For instance, analyzing and interpreting the performance of a company for the year 2004 with the help of profit and loss account of that company for the year ending 31st December, 2004 and the balance sheet of that company as on that date.

Format

Balance Sheet of XYZ Company as on 31.12.2004

	Amount	Amount
	Rs.	Rs.
USES OF FUNDS		
Fixed Assets		
Land & Buildings	x x x	
Plant & Machinery	x x x	
Furniture & Fixtures	x x x	x x x
Current Assets		
Stock – in – trade	x x x	
Sundry Debtors	x x x	
Bills Receivables	x x x	
Cash at Bank	x x x	
Cash in Hand	x x x	
	x x x	
Current Liabilities		
Sundry Creditors	x x x	
Bills Payable	x x x	
Outstanding Expenses	x x x	
	x x x	
Net Working Capital (CA-CL)		x x x
Total Net Assets		x x x

6.4.2 MATERIALS USED

Analysis and interpretation of Financial Statements may be external or internal depending upon the material or information used.

External Analysis: The Financial Statements are prepared and presented to outsiders including shareholders and the employees. Normally, external people do not have an easy access to the detailed accounting records of the organization. The outsiders have to rely on the figures in the Financial Statements and other supplements in the annual reports for the purpose of analysis and interpretation to form an idea about the financial health of the company and to take appropriate decisions. Such type of analysis by the people external to the organization is called 'external analysis'. Due to this reason of non-availability of detailed information, this type of analysis serves only a very limited purpose.

Internal Analysis: When the Financial Statements of an organization are analysed and interpreted by the people internal to the organization and who have an easy access to the detailed accounting records for the purpose of assisting the managerial personal to take corrective measures and appropriate decisions, is called 'internal analysis'. As complete set of information is available to the analyst, he can analyse the performance of the organization clearly stating the reasons for improvements or decreasing trends in various indicators of performance.

Activity - 1

What are horizontal analysis and vertical analysis?

6.5 IMPORTANCE OF FINANCIAL ANALYSIS

Financial analysis focuses on highlighting the facts and relationships related to managerial performance, corporate efficiency, financial strengths and weaknesses and credit worthiness of the company. A finance manager must be well equipped with the different tools of analysis to make rational decisions for the firm. The tools for analysis help in studying accounting data, so as to determine the continuity of the operating policies, investment value of the business, credit ratings and testing the efficiency of operations. The techniques are equally important in the area of financial control, enabling the finance manager to make constant reviews of the actual financial operations of the firm as a whole and in part, to analyse the cause of major deviations, which result in corrective action wherever indicated.

The importance of financial analysis is not limited to the finance manager alone. Its scope of importance is quite broad which include top management, creditors, investors and labourers.

Financial analysis helps the top management in measuring the success or otherwise of the company's operations, appraising the individuals performance and evaluate the system of internal control.

A creditor, through an analysis of Financial Statements appraises not only the ability of the company, at a particular point of time, to meet its obligations, but also judges the probability of its continued ability to meet all its financial obligations.

of the business. By looking at a trend in a particular ratio, one may find whether the ratio is falling, rising or remaining relatively constant. From this observation, a problem is detected or the sign of good management is found.

iv) Funds Flow Statement

It is a statement, which shows the flow of funds i.e., both, inflow and outflow. By funds, in a narrow sense, we mean the total cash fund. In a broad sense, by funds we mean total resources of the firm. A mid way approach would be working capital. More commonly, the word 'funds' is used for the working capital and the analysis of funds is rightly called an analysis of working capital. It is through the technique of 'Funds Flow Analysis', it is possible to study the funds generated and used. The statement not only shows the changes in the working capital but also the causes for such changes.

v) Cash Flow Analysis

It refers to the analysis of actual movement of cash into and out of an organization. The flow of cash into the business is called as cash inflow or positive cash flow and the flow of cash out of the firm is called as cash outflow or a negative cash flow. The difference between the inflow and outflow of cash is the net cash flow representing surplus or a deficit. Cash Flow Statement is prepared to project the manner in which the cash received has been utilized during an accounting year. It includes only cash transactions. It is a statement, which shows the sources of cash receipts and also the purposes for which payments are made. Thus, it summarises the causes for the changes in cash position of a business enterprise between dates of two balance sheets.

vi) Ratio Analysis

It describes the significant relationship which exists between figures shown in a balance sheet, in a profit and loss account, in a budgetary control system or in any other part of the accounting organization. As a technique of financial analysis, accounting ratios measure the comparative significance of the individual items of the income and position statements. It is possible to assess the profitability, solvency and efficiency of an enterprise through the technique of ratio analysis.

6.7 COMPARATIVE FINANCIAL STATEMENT ANALYSIS

Here, both the Profit and Loss Account and Balance Sheet are prepared by providing columns for the figures for both, the current year as well as for the previous year and for the changes during the year both, in absolute and relative terms. As a result, it is possible to find out not only the balances of account as on different dates and summaries of different operational activities of different periods, but also the extent of their increase or decrease between these dates. The figures in the comparative statements can be used for identifying the direction of changes and also the trends in different indicators of performance of an organization.

Illustration - 1

Convert the following income statement into a Comparative Income Statement of BCR Co. Ltd. and interpret the changes in 2003 in the light of the conditions in 2002.

Interpretation

- i) The Company has made efforts to reduce the cost as the Cost of Goods Sold has reduced considerably.
- ii) The Gross Profit has also increased in 2003 compared to 2002 as the sales have gone up.
- iii) The company has also concentrated on reducing the operating cost, hence, the percentage of operating profit has increased.

The overall performance of the company has improved in the year 2003.

Illustration - 2

From the following Income Statement of Madhu Co. Ltd., prepare Comparative Income Statement for the year 2002 and 2003 and interpret the same.

Particulars	2002 Rs.	2003 Rs.
Sales	400,000	650,000
Purchases	200,000	250,000
Opening Stock	20,600	32,675
Closing Stock	32,675	20,000
Salaries	16,010	18,000
Rent	5,100	6,000
Postage and Stationery	3,200	4,100
Advertising	2,600	4,600
Commission on Sales	3,160	3,500
Interest Paid	200	500
Loss on Sale of Asset	4,000	2,000
Profit on Sale of Investment	3,000	4,500

Solution

Comparative Income Statement of Madhu Co. Ltd for the year ended 2002 and 2003

Particulars	2002 Rs.	2003 Rs.	Increase/ Decrease Rs.	Absolute Change %
Sales	400,000	650,000	250,000	62.50
Less: Cost of Goods Sold:				
Opening Stock	20,600	32,675	12,075	58.62
Add: Purchases	2,00,000	2,50,000	50,000	25.00
Less: Closing Stock	32,675	20,000	-12,675	-38.79
	187,925	262,675	74,750	39.78
Gross profit (A)	212,075	387,325	175,250	82.64

Sundry Creditors	100	120	Bills Receivable	150	90
Other Current Liabilities	5	10	Sundry debtors	200	250
			Stock	250	350
			Prepaid Expenses	-	2
	1435	1697		1435	1697

Solution

Comparative Balance Sheets of J Ltd. as on 31 December 2002 and 2003.

	2002 Rs.	2003 Rs.	Increase/ Decrease Rs.	Absolute Change %
Assets				
Current Assets				
Cash & Bank	20	80	60	300
Bills Receivable	150	90	-60	-40
Sundry Debtors	200	250	50	25
Stock	250	350	100	40
Prepaid Expenses	-	2	2	∞
Total Current Assets	620	772	152	24.52
Fixed Assets				
Land & Buildings	370	270	-100	-27.03
Plant & Machinery	400	600	200	50
Furniture & fixtures	20	25	5	25
Other Fixed Assets	25	30	5	20
Total Fixed Assets	815	925	110	13.50
Total Assets	1435	1697	262	18.26
Liabilities & Capital				
Current Liabilities				
Bills Payable	50	45	-5	-10
Sundry Creditors	100	120	20	20
Other Current Liabilities	5	10	5	100
Total Current Liabilities	155	175	20	12.90
Debentures	200	300	100	50
Long Term Loans	150	200	50	33.33
	505	675	170	33.66
Equity Share Capital	600	800	200	33.33
Reserves & Surplus	330	222	-108	-32.73
Total Liabilities & Capital	1435	1697	262	18.26

Solution

Comparative Balance Sheets at the end of 2002 and 2003.

(Rs.'000)

Particulars	2002	2003	Increase/ Decrease	Absolute Change %
	Rs.	Rs.	Rs.	
ASSETS				
Current Assets				
Bills Receivables	1217	1584	367	30.16
Advance Payment of Tax	1818	500	-1318	-72.50
Cash & Bank	2419	1886	-533	-22.03
Sundry Debtors	38700	36951	-1749	-4.52
Stock	52334	36769	-15565	-29.74
Stores, Spares and Tools	1890	2042	152	8.04
Total Current Assets	98,378	79,732	-18,646	-18.95
Investments				
Fixed Assets	17662	14806	-2856	-16.17
Total Assets	117987	96967	-21020	-17.82
LIABILITIES AND CAPITAL				
Current Liabilities				
Sundry Creditors	27122	14734	-12388	-45.68
Provision for Taxation	5012	4578	-434	-8.66
Customers Credit Balances	1603	2079	476	29.69
Accruals (interest in securities)	695	237	-458	-65.90
Unclaimed Dividends	6	109	103	1716.67
Provision for Proposed Dividend	1113	1420	307	27.58
Provision for Contingent Liabilities	75	81	6	8.00
Provision for Gratuity	-	198	198	∞
Total Current Liabilities	35,626	23,436	-12,190	-34.22
Loans and Advances	71745	51282	-20463	-28.52
Shareholders Funds				
6% Redeemable Preference Share Capital	2500	2500	0	0.00
6 1/2 % Redeemable Preference Share Capital	-	3000	3000	∞
Ordinary Share Capital	5500	13200	7700	140.00
Reserves and Surplus	2500	3450	950	38.00
Profit & Loss Account	116	99	-17	-14.66
Total Liabilities	1,17,987	96,967	-21,020	-17.82

Furniture	300	340
Stock	400	500
Cash	450	490
Total Assets	2350	2570

6.8 COMMON - SIZE FINANCIAL STATEMENT ANALYSIS

Common-Size Statement is a financial tool for studying the key changes and trends in the financial position (Balance Sheet) and financial result (Profit and Loss Account) of a company. Here, each item in the statement is stated as a percentage of total of which that item is a part. Thus, each percentage exhibits the relation of the individual item to its respective total.

First, state the total of the statement as 100 % and then, compute the ratio of each statement item to the statement total.

Inter-firm comparison or comparison of the company's position with the related industry as a whole is possible with the help of Vertical Common Size Statement Analysis. Horizontal Common Size Statement Analysis facilitates trend analysis of the financial result and financial position of the statement of the company over the past several years.

Illustration - 5

- Following are the income statements of Karan Ltd. and Naunika Ltd. For the year ending 31st March, 2004.

Particulars	Karan Ltd. (Rs.'000)	Naunika Ltd. (Rs.'000)
Income		
Sales	2538	970
Miscellaneous income	26	10
Total income	2564	980
Expenses		
Cost of Goods Sold	1422	475
Administration Expenses	184	97
Selling Expenses	720	272
Other Non-Operating Expenses.	40	29
Total expenses	2366	873
Tax	68	28

Kranthi Ltd.

Particulars	Rs.	Particulars	Rs.
Sales	3,15,000	Advertising	2,520
Purchases	1,57,500	Commission on Sales	3,150
Opening Stock	29,400	Discount Allowed	840
Closing Stock	33,600	Interest Paid	2,100
Salaries	15,540	Loss on Sale of Asset	4,830
Rent	5,040	Profit on Sale of Investment	3,999
Postage and Stationery	2,100	Provision for Taxation	21,000

Hema Ltd.

Particulars	Rs.	Particulars	Rs.
Sales	4,00,000	Advertising	2,600
Purchases	2,00,000	Commission on Sales	3,160
Opening Stock	20,600	Discount Allowed	--
Closing Stock	32,675	Interest Paid	200
Salaries	16,010	Loss on Sale of Asset	4,000
Rent	5,100	Profit on Sale of Investment	3,000
Postage and Stationery	3,200	Provision for Taxation	20,000

You are required to prepare a Common-Size Income Statement.

Solution

Common-Size Income Statements of Kranthi and Hema Ltd. for the year ended 31 March, 2004:

Particulars	Kranthi Ltd			Hema Ltd		
	Rs.	Rs.	%	Rs.	Rs.	%
Sales		3,15,000	100		4,00,000	100
Less: Cost of Goods Sold						
Opening Stock	29,400			20,600		
Add : Purchase	1,57,500			2,00,000		
	1,86,900			2,20,600		
Less: Closing Stock	33,600	1,53,300	48.67	32,675	1,87,925	46.98
Gross Profit (A)		1,61,700	51.33		2,12,075	53.02
Operating Expenses						
Salaries		15,540	4.93		16,010	4.00
Rent		5,040	1.6		5,100	1.28

Prepare a common-size Balance Sheet and interpret the same.

Illustration - 7

Convert the following Balance Sheet in to Common-size Balance Sheets and interpret the results.

Balance Sheets as on 31-12-2002 and 2003 (Amount Rs.in Lakhs)

Liabilities	2002 Rs.	2003 Rs.	Assets	2002 Rs.	2003 Rs.
Equity Share Capital	1000	1200	Debtors	450	390
Capital Reserve	90	185	Cash	200	15
General Reserve	500	450	Stock	320	250
Sinking Fund	90	100	Investment	300	250
Debentures	450	650	Building Less Depreciation	800	1400
Sundry Creditors	200	150	Land	198	345
Others	15	20	Furniture & fittings	77	105
	2345	2755		2345	2755

Solution

Common size Balance Sheet at the end of the year 2002 and 2003 (in Lakhs)

Particulars	2002		2003	
	Rs.	%	Rs.	%
Capital & Reserves				
Equity Share capital	1000	42.64	1200	43.56
Capital Reserve	90	3.84	185	6.72
General Reserve	500	21.32	450	16.33
Sinking Fund	90	3.84	100	3.63
	1680	71.64	1935	70.24
Long Term Debts				
Debentures	450	19.19	650	23.59
Current Liabilities				
Sundry Creditors	200	8.53	150	5.44

Balance Sheets as on

Particulars	31.12.2002	31.12.2003
	Rs.	Rs.
Liabilities		
Share Capital	200,000	290,000
Reserves	40,220	40,000
P&L A/c	15,555	14,292
Long Term loan	18,965	19,262
Creditors	5,125	5,125
Bills Payable	2,300	2,195
Accounts Payable	13,000	15,000
Out Standing Expenses	2,220	1,011
	297,385	386,885
Assets		
Land & Buildings	50,000	70,000
Plant & machinery	100,000	100,000
Furniture	30,000	62,500
Stock	7,165	8,192
Debtors	40,000	52,000
Bills Receivable	50,000	49,020
Cash	--	20,000
Prepaid Expenses	20,220	25,173
	297,385	386,885

Solution

Common size Income Statement for the year ended 31 Dec. 2002 and 2003

Particulars	Karan Ltd.	%	Naunika Ltd.	%
	(Rs.)		(Rs.)	
Net Sales	500000	100	495000	100
Less: Cost of goods sold	378000	75.6	360000	72.72
Gross Profit	122000	24.4	135000	27.28
Less: Operating Expenses	62500	12.5	60000	12.12
Operating Profit	59500	11.9	75000	15.15
Add: Income from investment	70000	14	89000	16.16
PAT	129500	25.9	164000	33.13

- iv) The company has gone for issue of share capital and raising long term loans in order to finance the purchase of fixed assets like furniture and land & buildings.
- v) The company has also improved its liquidity position as it has increased its current assets mainly cash balances by 5.17%
- vi) By observing the increase in the percentage of current assets compared to current liabilities, we can predict that the company is having a very good liquidity and solvency position.

Companies operations are good and are improving year by year.

6.9 TREND ANALYSIS

The financial statements may be analysed by computing trends of series of information. Trend analysis determines the direction upwards or downwards and involves the computation of the percentage relationship that each statements item bears to the same item in the base year.

Procedure for calculating trends

One year is taken as base year. Generally, the first or the last year is taken as base year. The figures of base year are taken as 100. The trend percentages are calculated in relation to base year. If a figure in other year is less than the figure in base year, the trend percentage will be less than 100 and it will be more than 100 if figure is more than the base year figure. Each year's figure is divided by the base year figure.

$$\text{Trend Ratio} = \frac{\text{Present year value}}{\text{Base year value}} \times 100$$

The base period should be carefully selected. The base period should be a normal period. The accounting procedures and conventions used for collecting data and preparation of financial statements should be similar, otherwise the figures will not be comparable.

The interpretation of trend analysis involves a cautious study. The mere increase or decrease in trend percentage may give misleading results. For example, an increase of 20% in current assets may be treated favorable. If this increase in current assets is accompanied by an equivalent increase in current liabilities, then this increase will be unsatisfactory. The increase in sales may not increase profits if cost of production has gone up.

Illustration - 9

Calculate the trend percentages from the following figures of X Ltd., taking 1979 as the base year and interpret them.

(Rs. In Lakhs)

Year	Sales	Stock	Profit before tax
	Rs.	Rs.	Rs.
1979	1881	709	321
1980	2340	781	435
1981	2655	816	458
1982	3021	944	527
1983	3768	1154	627

(Rs. in Lakhs)

Particulars	1990	1991	1992	1993
Cash	100	120	80	140
Debtors	200	250	325	400
Stock	300	400	350	500
Other current assets	50	75	125	150
Land	400	500	500	500
Buildings	800	1000	1200	1500
Plant	1000	1000	1200	1500

Solution**Trend Percentages**

(Rs. in Lakhs)

Assets	1985	Trend %	1986	Trend %	1987	Trend %	1988	Trend %
Current Assets								
Cash	100	100	120	120	80	80	140	140
Debtors	200	100	250	125	325	162.5	400	200
Stock	300	100	400	133.33	350	116.67	500	166.67
Other Current Assets	50	100	75	150	125	250	150	300
Total A	650	100	845	130	880	135.38	1190	183.08
Fixed Assets								
Land	400	100	500	125	500	125	500	125
Buildings	800	100	1000	125	1200	150	1500	187.5
Plant	1000	100	1000	100	1200	120	1500	150
Total B	2200	100	2500	113.64	2900	131.82	3500	159.09
A + B	2850	100	3345	117.36	3780	132.63	4690	164.56

Illustration - 11

From the following data relating to the Liabilities side of Balance Sheet of X Ltd., for the period 31st Dec., 1986 to 31st Dec, 1984 calculate trend percentages taking 1986 as the base year.

(Rs. in Lakhs)

Liabilities	1986	1987	1988	1989
Equity Share Capital	1000	1000	1200	1500
General Reserves	800	1000	1200	1500
12% Debentures	400	500	500	500

- iv) Monetary information alone is considered in financial analysis, while non monetary factors are ignored
- v) The Financial Statements are prepared on the basis of going concern concept, as such it does not give an exact position.

6.11 SUMMARY

Financial Statements are the end product of the financial accounting practices: The two major Financial Statements are the Balance Sheet and the Income Statement. Financial Statement Analysis is a study of the relationship among various financial facts and figures as given in a set of Financial Statements. Financial Statement Analysis can be done based on 'Modus Operandi' and 'Material Used'. Financial Analysis focuses on highlighting the facts and relationships related to managerial performance, corporate efficiency, financial strengths and weaknesses and credit worthiness of the company.

Most widely known techniques of Financial Statement Analysis are Comparative Statements, Common-Size Statements, Trend Analysis, Ratio Analysis, Funds Flow Analysis and Cash Flow Analysis.

6.12 MODEL ANSWERS TO ACTIVITIES

1. Horizontal analysis refers to the comparison of financial data of a company for several years. The figures of the various years are compared with that of the base year. Vertical analysis refers to the study of relationship of various items in the financial statements of an accounting period.

2. **Comparative Income Statement of Day Dreaming Co. Ltd.**
for the year ended 2002 and 2003

(Rs. in Lakhs)

	2002 Rs.	2003 Rs.	Increase/ Decrease Rs.	Change in %
Net Sales	900	1050	150	16.67
Less: Cost of Goods Sold	650	850	200	30.77
Gross Profit (A)	250	200	-50	-20.00
Operating Expenses				
Administration Expenses	40	40	0	0.00
Selling Expenses	20	20	0	0.00
Total Operating Expenses (B)	60	60	0	0.00
Operating Profit (A - B)	190	140	-50	-26.32
Other Expenses	-	-	-	-
Net Profit	190	140	-50	-26.32

- iii) Shareholders funds has increased by 45000 i.e., 3%.
- iv) The overall financial position of the company is satisfactory.

3. Common-size Balance Sheet of Harsha Ltd. as on 31 Dec 2002 and 2003:

Particulars	2002		2003	
	Amount	%	Amount	%
Capital and Reserves				
Equity Capital	1,00,000	43.48	1,65,000	48.53
Preference Capital	50,000	21.74	75,000	22.05
Reserves	10,000	4.34	15,000	4.41
P&L A/c	7,500	3.26	10,000	2.95
Total	1,67,500	72.82	2,65,000	77.94
Current Liabilities				
Bank Overdraft	25,000	10.87	25,000	7.35
Creditors	20,000	8.7	25,000	7.35
Provision for Taxation	10,000	4.35	12,500	3.68
Proposed Dividend	7,500	3.26	12,500	3.68
Total	62,500	27.18	75,000	22.06
Total Liabilities	2,30,000	100	3,40,000	100
Current Assets				
Stock	20,000	8.7	25,000	7.35
Debtors	50,000	21.74	62,500	18.38
Bills Receivables	10,000	4.35	30,000	8.82
Prepaid Expenses	5,000	2.17	6,000	1.78
Cash at bank	20,000	8.7	26,500	7.79
Cash in hand	5,000	2.17	15,000	4.41
Total	1,10,000	47.83	1,65,000	48.53
Fixed Assets (Net)	1,20,000	52.17	1,75,000	51.47
Total Assets	2,30,000	100	3,40,000	100

Interpretation

- i) In the year 2003, Current Assets were increased from 47.83% to 48.53%, Cash Balances increased by Rs.16500.
- ii) Current Liabilities decreased from 27.18% to 22.06% implying that the company has paid the current liabilities from current assets. Even then, the liquidity position is reasonably good.
- iii) Fixed Assets Increased from Rs.1,20,000 in 2002 to Rs.1,75,000 in 2003 as a result of purchase of fixed assets by additional issue of share capital.
- iv) The overall financial position of the company is satisfactory.

B. Long Answer Questions

1. State the different types of financial analysis and discuss the limitations of financial analysis and interpretation of financial statements.
2. Explain the usefulness of trend percentages in interpretation of financial performance of a company.
3. What is the importance of comparative statements? Illustrate your answer with particular reference to comparative income statements and state briefly how they are prepared.
4. What do you understand by analysis and interpretation of financial statements? Discuss their importance.
5. What are the different techniques used for analysis of financial statements?
6. What are common-size statements? Explain how they are prepared.

EXERCISES

1. From the following information of Narsimham Company Ltd., prepare a Comparative Income Statement for the year 2001 – 2002.

	2001 Rs.	2002 Rs.
Gross Sales	7,25,000	8,15,000
Less: Returns	25,000	15,000
Net Sales	7,00,000	8,00,000
Cost of Goods Sold	5,95,000	6,15,000
Gross Profit	1,05,000	1,85,000
Other Expenses		
Selling & distribution Expenses	23,000	24,000
Administration Expenses	12,700	12,500
Total Expenses	35,700	36,500
Operating Income	69,300	1,48,500
Other Income	1,200	8,050
	70,500	1,56,550
Non Operating Expenses	1,750	1,940
Net Profit	68,750	1,54,610

2. The following are the Balance Sheets of Mohan Ltd., at the end of 2002 and 2003.

Liabilities	Rs. '000		Assets	Rs. '000	
	2002	2003		2002	2003
Equity Share Capital	400	600	Land & buildings	270	170
Reserves & Surplus	312	354	Plant & Machinery	310	786
Debentures	50	100	Furniture & Fixtures	9	18

Sales Expenses	6000	6600
Total Expenses	9000	10000
Income from Operations	2800	5770
Add: Non-Operating Income	300	400
Total Income	3100	6170
Less: Non-Operating Expenses	400	600
Net Profit	2700	5570

5. Following are the Balance Sheets of Reddy Ltd. as on 31 March 2003 and 2004.

Rs. In('000)

Liabilities	2003	2004	Assets	2003	2004
Share Capital	2400	3600	Land & Buildings	1620	1040
Reserves & Surplus	1872	2124	Plant & Machinery	1860	4716
Debentures	300	600	Furniture & Fittings	54	108
Long Term Debt	900	1530	Other Fixed Assets	120	180
Bills Payable	1530	702	Long Term Loans	276	354
Other Current Liabilities	42	60	Cash & Bank Balances	708	60
			Bills Receivable	1254	1120
			Stock	960	780
			Prepaid Expenses	18	18
			Other Current Assets	174	240
	7044	8616		7044	8616

Analyze the financial position of the company with the help of the Common-Size Balance Sheet.

6. The accompanying balance sheet and profit and loss account related to SUMO Logistics Pvt Ltd. Convert these into common size statements.

Rs. '000

	Previous Year	Current Year
Liabilities		
Equity Share Capital (of Rs. 10 each)	240	240
General Reserve	96	182
Long term loans	182	169.5
Creditors	67	52
Outstanding expenses	6	-
Other current liabilities	9	6.5
Total Liabilities	600	650

8. Calculate trend percentages from the following figures of ABC Ltd., taking 1980 as base and interpret them:

Year	Sales	Stock	Profit before tax
1980	1,500	700	300
1981	2,140	780	450
1982	2,365	820	480
1983	3,020	930	530
1984	3,500	1160	660

9. From the following data relating to the Liabilities side of Balance Sheet of T Ltd., as on 31st March, 1988, you are required to calculate trend percentages taking 1988 as the base year.

(Rs. in Lakhs)

Liabilities	1988	1989	1990	1991
Share capital	100	125	130	150
Reserves & Surplus	50	60	65	75
12% Debentures	200	250	300	400
Bank overdraft	10	20	25	25
Profit & Loss A/c.	20	22	28	26
Sundry Creditors	40	70	60	70
Outside Creditors	2	3	5	4

6.14 FURTHER READINGS

- Gupta, S.P. : **Management Accounting**, Sahitya Bhavan Publications, Agra.
- Sharma, R.K. & Shashi Gupta, K. : **Management Accounting**, Kalyani Publishers, Ludhiana.
- Khan & Jain : **Management Accounting**, Tata McGraw Hill Publishing Co., New Delhi.
- Jawaharlal : **Managerial Accounting**, Himalaya Publishing Co., New Delhi.
- Manmohan & Goyal : **Principles of Management Accounting**, Sahitya Bhavan Publications, Agra.
- Vinayakan, N. & Sinha, I.B. : **Management Accounting - Tools and Techniques**, Himalaya Publishing House, Mumbai.

UNIT – 7 RATIO ANALYSIS - I

Objectives

This unit discusses the meaning and significance of ratio analysis. It also explains how profitability ratios are calculated and analysed.

After studying this unit, you should be able to:

- explain the meaning of Ratios and Ratio Analysis;
- recognize the need for Ratio Analysis; and
- assess the profitability of the company with the help of Profitability Ratios.

Structure

- 7.1 Introduction
- 7.2 Meaning of a Ratio
- 7.3 Meaning of Ratio Analysis
- 7.4 Objectives of Ratio Analysis
- 7.5 Significance of Ratio Analysis
- 7.6 Profitability Ratios
 - 7.6.1 Gross Profit Ratio
 - 7.6.2 Operating Ratio
 - 7.6.3 Operating Profit Ratio
 - 7.6.4 Expenses Ratio
 - 7.6.5 Net Profit Ratio
- 7.7 Overall Profitability Ratios
 - 7.7.1 Return on Capital Employed Ratio
 - 7.7.2 Return on Net Worth Ratio
 - 7.7.3 Return on Equity Ratio
 - 7.7.4 Return on Assets Ratio
 - 7.7.5 Return on Fixed Assets Ratio
 - 7.7.6 Return on Current Assets Ratio
 - 7.7.7 Earnings Per Share
 - 7.7.8 Price Earnings Ratio
 - 7.7.9 Dividend Per Share
 - 7.7.10 Dividend Yield Ratio
 - 7.7.11 Payout Ratio
 - 7.7.12 Book Value of Equity Share
- 7.8 Summary

- ii) analyse the capital structure of the firm
- iii) evaluate the firms profitability over a period of time and predict its future profitability
- iv) analyse the financial health of the firm for the purpose of internal control
- v) assess the return on investments in various assets of the company
- vi) assess the efficiency of the firm in assets management.

7.5 SIGNIFICANCE OF RATIO ANALYSIS

A financial analyst, before commenting upon the financial health or weakness of an enterprise, analyses the financial statements with various tools of analysis, just as a doctor examines his patient before making his conclusion regarding illness and before giving his treatment. A ratio is a symptom like blood pressure or the pulse rate or the temperature of an individual. Ratios help in having a clear understanding about the financial statements.

In a Vertical Analysis of financial statements, ratios play a significant role by assisting the analyst to form a judgement as to whether the performance of the firm, at a point of time, is good, questionable or poor. Similarly, in a Horizontal Analysis of financial statements, ratios indicate whether the financial position and condition of the firm is improving or deteriorating.

Various parties like trade creditors, banks, financial institutions, investors, shareholders and management are interested in the ratio analysis for knowing and evaluating the financial position of a firm for different purposes like for granting credit, providing loans or making investments in the firm.

Ratio analysis help in budgetary control and standard costing, apart from forecasting, planning, proper communication, control and coordination. As they expose the strengths and weakness of the firm, they are of immense importance in the analysis and interpretation of financial statements.

Categories of Ratios

The main grouping of ratios can be done in the following ways.

7.6 PROFITABILITY RATIOS

The profitability ratios are of utmost importance to the concern as they measure the profitability of a concern. These ratios show the end result of business activities, which is the main basis of the overall efficiency of a business concern. The various profitability ratios can be discussed under the heads - General Profitability Ratios and Overall Profitability Ratios.

General Profitability Ratios include Gross Profit Ratio, Operating Ratio, Operating Profit Ratio, Expenses Ratio and Net Profit Ratio.

7.6.1 GROSS PROFIT RATIO

This ratio reveals the gross margin on trading and is calculated as:

$$(\text{Gross Profit} \times 100) / \text{Net Sales}$$

It is calculated as : $(\text{Net Profit after tax} \times 100) / \text{Net Sales}$

$\text{Net Profit} = \text{Gross Profit} + \text{Incomes and Gains} - \text{Expenses and Losses}$

The higher the ratio, the more profitable is the business as it gives the idea of improved efficiency of the concern. This ratio differs much from Operating Profit Ratio as it is calculated after deducting non operating expenses, like loss on sale of fixed assets etc., from Operating Profit and adding non operating income, like interest and dividends on investments, profit on sale of investments and fixed assets, to such profit.

Illustration - 1

Total Sales Rs.10,00,000; Sales returns Rs. 50,000; Gross Profit Rs.3,75,000;

Calculate Gross Profit Ratio, Cost of goods sold, Cost of goods sold Ratio.

Solution

$$\begin{aligned}\text{Net sales} &= \text{Total Sales} - \text{Sales returns} \\ &= 10,00,000 - 50,000 \\ &= \text{Rs. } 9,50,000\end{aligned}$$

Calculating Gross Profit Ratio:

$$\begin{aligned}&= \frac{\text{Gross Profit}}{\text{Net Sales}} \times 100 \\ &= \frac{3,75,000}{9,50,000} \times 100 \\ &= 39.47\%\end{aligned}$$

Calculating Cost of Goods Sold:

$$\text{Net sales} - \text{Gross Profit} = 9,50,000 - 3,75,000 = \text{Rs. } 5,75,000$$

Calculating Cost of Goods Sold Ratio:

$$\begin{aligned}&= \frac{\text{Cost of goods sold}}{\text{Net Sales}} \times 100 \\ &= \frac{5,75,000}{9,50,000} \times 100 = 60.53\%\end{aligned}$$

(OR)

$$\begin{aligned}\text{Cost of goods sold Ratio} &= 100 - \text{Gross Profit Ratio} \\ &= 100 - 39.47 = 60.53\%\end{aligned}$$

Solution

Calculating Operating Ratio:

Operating cost = Cost of goods sold + Administration expenses + Selling & Distribution expenses

$$= 2,50,000 + 50,000 + 80,000 = \text{Rs. } 3,80,000$$

$$\text{Therefore, Operating Ratio} = \frac{\text{Operating Cost}}{\text{Net Sales}} \times 100$$

$$= \frac{3,80,000}{5,00,000} \times 100 = 76\%$$

Operating Profit Ratio = 100 - Operating Ratio

$$= 100 - 76$$

$$= 24\%$$

Illustration - 5

Fill in the blanks:

Particulars	Amount Rs.	Particulars	Amount Rs.
To Cost of goods sold	XXX	By Sales	XXX
To Gross Profit c/d.	XXX		
	5,00,000		5,00,000
To operating expenses	XXX	By Gross Profit b/d.	XXX
To Non-operating expenses	30,000		
To Net Profit	XXX		
	XXX		XXX

Given Cost of goods sold = 70%; Net profit Ratio = 10%

Solution

Working Notes:

Calculating Cost of goods sold

Given that Cost of goods as 70% of Net sales

$$= 5,00,000 \times 70\% = \text{Rs. } 3,50,000$$

Therefore, Gross Profit = Net Sales - Cost of goods sold

$$= 5,00,000 - 3,50,000$$

$$= \text{Rs. } 1,50,000$$

$$\text{Calculating Net Profit Ratio} = \frac{\text{Net Profit}}{\text{Net Sales}} \times 100$$

$$= \frac{55,000}{1,00,000} \times 100 = 55\%$$

Calculating Administration Expenses Ratio:

$$= \frac{\text{Administration expenses}}{\text{Net Sales}} \times 100$$

$$= \frac{20,000}{1,00,000} \times 100 = 20\%$$

Calculating Selling Expenses Ratio:

$$= \frac{\text{Selling expenses}}{\text{Net Sales}} \times 100$$

$$= \frac{10,000}{1,00,000} \times 100 = 10\%$$

Calculating Distribution Expenses Ratio:

$$= \frac{\text{Distribution expenses}}{\text{Net Sales}} \times 100$$

$$= \frac{20,000}{1,00,000} \times 100 = 20\%$$

Calculating Operating Ratio:

Operating cost = Cost of goods sold + Administration Expenses + Selling & Distribution Expenses

$$= 70,000 + 20,000 + 10,000 + 20,000 = \text{Rs. } 1,20,000$$

$$\text{Therefore, Operating Ratio} = \frac{\text{Operating Cost}}{\text{Net Sales}} \times 100$$

$$= \frac{1,20,000}{1,00,000} \times 100 = 120\%$$

Operating Profit Ratio = 100 - Operating Ratio

$$= 100 - 120\%$$

$$= -20\%$$

Activity - 1

From the following, calculate Cost of Goods Sold Ratio. Net sales Rs. 1,00,000; Gross Profit Rs. 60,000.

.....
.....
.....
.....

Equity Shareholders' Funds = Equity Share Capital + Reserves and Surplus – Fictitious Assets.

A higher ratio is better for the equity shareholders. Inter firm and intra firm comparisons must be made to understand the ratio with its full implication.

7.7.4 RETURN ON ASSETS RATIO

It is calculated to measure profit after tax against the investment in total assets to ascertain whether assets are properly utilized or not.

It is calculated as $(\text{Profit after tax} \times 100) / \text{Total Assets}$

Total Assets: Fixed Assets + Current Assets + Investments. They do not include fictitious assets. A higher ratio is better for the company.

7.7.5 RETURN ON FIXED ASSETS RATIO

It is calculated to measure the Profit After Tax (PAT) earned against the investments in Fixed Assets, to find out whether the assets are properly used or not in the business operations.

It is calculated as $(\text{Profit after tax} \times 100) / \text{Fixed Assets}$

The higher ratio is better for the company.

7.7.6 RETURN ON CURRENT ASSETS RATIO

This ratio is calculated to measure the Profit After Tax earned against the investments in current assets.

It is calculated as: $(\text{Net Profit After Tax} \times 100) / \text{Current Assets}$.

7.7.7 EARNINGS PER SHARE

It indicates the earnings available to each Equity Shareholder, which is calculated as follows.

$\text{Net Profit After Tax} - \text{Preference Dividend} / \text{Equity Shareholders Funds}$

If there are both Equity and Preference share Capital, then deduct the Preference dividends out of net profit to arrive at the net profit available to Equity Shareholders. The Performance and prospects of a company is much affected by its Earnings Per Share. The higher the Earnings Per Share, the better is the performance of the company. It is one of the driving factors in investment analysis and also financial analysis. A higher Earnings Per Share enables a company to pay more dividend or issue bonus shares. In short, the share price of the company in the stock market will be affected by all these factors.

Though Earnings Per Share is widely used ratio, it must be cautiously used as it does not represent the various Financial Operations of the business. Moreover, the financial data of different companies is affected by different practices in respect to stock in trade, depreciation, etc. This ultimately affects the calculation of Earnings Per Share.

7.7.8 PRICE EARNINGS RATIO

This ratio expresses the relationship between market price of share of a Company and Earnings Per Share of that company.

It is calculated as: $\text{Market Price of Equity Share} / \text{Earnings Per Share (EPS)}$

	Rs.
Sales	5,00,000
Less: Cost of goods sold	3,00,000
Gross Margin	2,00,000
Less: Operating expenses	90,000
	1,10,000
Less: Depreciation	20,000
	90,000
Less: Interest	7,000
	83,000
less: Tax	33,200
Net Profit	49,800
Less: Preference Dividend	9,000
Earnings available to Equity Shareholders	40,800

Balance Sheet of Vamshi & Co.

Liabilities	Amount Rs.	Assets	Amount Rs.
Equity Share Capital (20,000 Shares @ 10/- each)	2,00,000	Fixed Assets	3,00,000
9% Pref. Share Capital	1,00,000	Non-Fixed Assets	1,80,000
7% Debentures	1,00,000	Miscellaneous expenses	20,000
General Reserve	80,000		
Short-term liabilities (Current Liabilities)	20,000		
	5,00,000		5,00,000

Additional information: Market price per share Rs. 7.50

Equity dividend 10%

Calculate: (a) Return on Capital employed (b) Return on Networth (c) Return on Equity (d) Return on Assets (e) Return on Current Assets (f) Return on Working Capital (g) Gross Profit Ratio (h) Net Profit Ratio (i) Operating Ratio (j) Operating Profit Ratio (k) Cost of Goods Sold Ratio (l) Gross Profit to Cost of goods Sold Ratio (m) Earnings per Share (n) Earnings Yield Ratio (o) Price-Earning Ratio (p) Dividend per Share (q) Dividend Yield Ratio (r) Pay-out Ratio (s) Retention Ratio.

$$\text{Return on Assets} = \frac{49,800}{4,80,000} \times 100 = 10.375\%$$

$$\text{e) Return on Current Assets} = \frac{\text{Net Profit after Interest and Tax}}{\text{Current Assets}} \times 100$$

$$= \frac{49,800}{1,80,000} \times 100 = 27.66\%$$

$$\text{f) Return on Working Capital} = \frac{\text{Net Profit after Interest and Tax}}{\text{Working Capital}} \times 100$$

$$\text{Working Capital} = \text{Current assets} - \text{Current Liabilities}$$

$$= 1,80,000 - 20,000$$

$$= \text{Rs. } 1,60,000$$

$$\text{Return on Working Capital} = \frac{49,800}{1,60,000} \times 100 = 31.25\%$$

$$\text{g) Gross Profit Ratio} = \frac{\text{Gross Profit}}{\text{Net Sales}} \times 100$$

$$= \frac{2,00,000}{5,00,000} \times 100 = 40\%$$

$$\text{h) Net profit Ratio} = \frac{\text{Net Profit}}{\text{Net Sales}} \times 100$$

$$= \frac{49,800}{5,00,000} \times 100 = 9.96\%$$

$$\text{i) Operating Ratio} = \frac{\text{Operating Cost}}{\text{Net Sales}} \times 100$$

$$= \frac{3,90,000}{5,00,000} \times 100 = 78\%$$

$$\text{Operating Cost} = \text{Cost of goods sold} + \text{Administration expenses} + \text{Selling \& Distribution expenses}$$

$$= 3,00,000 + 90,000$$

$$= \text{Rs. } 3,90,000$$

$$\text{j) Operating Profit Ratio} = 100 - \text{Operating Ratio}$$

$$= 100 - 78\%$$

$$= 22\%$$

$$\begin{aligned} \text{r) Pay-out Ratio} &= \frac{\text{Dividend per Share}}{\text{Earnings per Share}} \times 100 \\ &= \frac{2}{2.04} \times 100 \end{aligned}$$

$$\begin{aligned} \text{s) Retention Ratio} &= 100 - \text{Pay-out Ratio} \\ &= 100 - 98 \\ &= 2\% \end{aligned}$$

Illustration - 9

	Rs.
Net profit before interest and tax	2,75,000
Net profit after interest	2,20,000
Net profit after interest and tax	1,10,000
Net profit available to equity shareholders	75,000
Capital employed	11,00,000
Shareholder's fund	9,00,000
Equity shareholder's fund	5,50,000
Total assets	12,65,000
Fixed assets	8,80,00
Current assets	3,85,000
Current liabilities	1,50,000

Calculate a) Return on Capital employed (b) Return on Networth (c) Return on Equity (d) Return on Assets (e) Return on Current Assets (f) Return on Working Capital g) Return on fixed assets

Solution

$$\text{a) Return on Capital Employed (ROCE)} = \frac{\text{Net profit after depreciation before interest}}{\text{Capital employed}} \times 100$$

$$\text{ROCE} = \frac{2,75,000}{11,00,000} \times 100 = 25\%$$

$$\text{b) Return on Networth} = \frac{\text{Net profit after depreciation and interest}}{\text{Shareholders fund}} \times 100$$

$$\text{RONW} = \frac{2,20,000}{9,00,000} \times 100 = 24.44\%$$

$$\text{c) Return on Equity} = \frac{\text{Net profit available to equity shareholders}}{\text{Equity shareholders fund}} \times 100$$

Illustration - 10

The format of Trading, Profit and Loss Account is given as under: Fill in the blanks and complete these accounts with the help of given ratios.

	Rs.		Rs.
To Cost of goods sold	5,40,000	By Sales	--
To Gross profit	--		--
	--		--
To Operating expenses	--	By Gross profit	--
To Non-operating expenses	20,000		--
To Net Profit	--		--
	--		--
	--		--

Ratios : Gross Profit to Cost of goods Sold : 33.13 %

Net Profit to Sales : 12%

Solution

$$a) \quad \text{Gross Profit to Cost of goods Sold} = \frac{\text{Gross Profit}}{\text{Cost of Gross Sold}} \times 100$$

$$33 \frac{1}{3}\% = \frac{\text{Gross Profit}}{\text{Cost of Gross Sold}}$$

$$\frac{1}{3} = \frac{\text{Gross Profit}}{5,40,000}$$

$$= 5,40,000 \times \frac{1}{3}$$

$$= \text{Rs. } 1,80,000$$

$$b) \quad \text{Sales} = \text{Cost of goods sold} + \text{Gross profit}$$

$$= 5,40,000 + 1,80,000 = 7,20,000$$

$$c) \quad \text{Net profit ratio} = \frac{\text{Net Profit}}{\text{Sales}} \times 100$$

$$12\% = \frac{\text{Net Profit}}{7,20,000}$$

$$= \frac{7,20,000 \times 12}{100}$$

$$= \text{Rs. } 86,400$$

7.9 MODEL ANSWERS TO ACTIVITIES

$$\begin{aligned} 1. \quad \text{Cost of Goods Sold} &= \text{Net Sales} - \text{Gross Profit} \\ &= 1,00,000 - 60,000 \\ &= \text{Rs. } 40,000. \end{aligned}$$

$$\begin{aligned} \text{Cost of Goods Sold Ratio} &= \frac{\text{Cost of Goods Sold}}{\text{Net Sales}} \times 100 \\ &= \frac{40,000}{1,00,000} \times 100 \\ &= 40\%. \end{aligned}$$

$$\begin{aligned} 2. \quad \text{a) Operating Ratio} &= \frac{\text{Operating Cost}}{\text{Net Sales}} \times 100 \\ &= \frac{70,000}{1,00,000} \times 100 \\ &= 70\% \end{aligned}$$

$$\begin{aligned} \text{b) Operating Profit Ratio} &= 100 - \text{Operating Ratio} \\ &= 100 - 70 \\ &= 30\% \end{aligned}$$

$$\begin{aligned} 3. \quad \text{Return on Capital Employed} &= \frac{\text{Net Profit after Depreciation}}{\text{Capital Employed}} \times 100 \\ &= \frac{80,000}{3,50,000} \times 100 \\ &= 22.85\% \end{aligned}$$

$$\begin{aligned} 4. \quad \text{Return of Working Capital} &= \frac{\text{Net Profit after Taxes}}{\text{Working Capital}} \\ &= \frac{1,12,450}{20,000} \\ &= 562.25\%. \end{aligned}$$

7.10 SELF ASSESSMENT QUESTIONS

A. Short Answer Questions

1. What do you understand by the terms 'Ratio' and 'Ratio Analysis'?
2. What are the objectives of Ratio Analysis?
3. Discuss the need for Ratio Analysis.

Income Statement

(Rs. in '000)

	2003	2002
Net Sales (60% on credit)	4,500	3,600
Cost of goods sold	3,300	2,900
Gross Profit	1,200	700
Distributing Expenses	500	300
Profit before tax	700	400
Tax (50%)	350	200
Profit after tax	350	200
Free reserves at the beginning of the year	350	200
	700	400
Payment of cash dividend	100	50
Free reserves at the end of the year	600	350

Inventory was valued at Rs 2,69,000 as on 31st December 2001.

4. You are given the items from the Balance Sheet:	Rs.
10,000 Equity Shares of Rs. 10 each	1,00,000
9% Preference Shares	2,00,000
12% Debentures	1,00,000
Reserves, P&L a/c	60,000
Discount on issue of Shares and Debentures	20,000
Net Profit after Depreciation	2,20,000
Tax Rate 60%	
Market price per Share Rs. 7.50	
Equity Dividend 10%	
Total Assets (Excluding fictitious assets)	2,50,000
Current Assets	80,000
Current Liabilities	20,000

Calculate (a) Return on Capital employed (b) Return on Networth (c) Return on Equity (d) Return on Assets (e) Return on Current Assets (f) Return on Fixed Assets (g) Return on Working Capital (h) Earnings per share (i) Earnings Yield Ratio (j) Price-Earning Ratio (k) Dividend per Share (l) Dividend Yield Ratio (m) Pay-out Ratio (n) Retention ratio

(Ans: (a) 50% (b) 61.17% (c) 46.57% (d) 33.28% (e) 104% (f) 48.94% (g) 138.66% (h) 6.52 (i) 0.86 (j) 115.03 (k) 1 (l) 0.133 (m) 0.153 (n) 99.84%)

When any information regarding opening stock is not given or when it is impossible to calculate average stock, then, closing stock can be taken in place of average stock.

A higher velocity is always better.

8.2.3 DEBTORS / RECEIVABLES TURNOVER RATIO

It establishes the relationship between debtors and sales. That means, it measures accounts receivables (debtors + bills receivables) in terms of number of days of credit sales during a particular period. This ratio is a measure of efficiency in collecting the debtors and tells how efficiently a company is enforcing its credit policy.

$$\text{Debtors Turnover Ratio} = \text{Net Credit Sales} / \text{Average Debtors}$$

$$\text{Net Credit Sales} = \text{Credit Sales} - \text{Sales Returns}$$

If any information regarding credit sales is not given, then total sales can be considered as credit sales.

Debtors must be taken at gross value without adjusting for provision for bad and doubtful debts. If information regarding average debtors is not given, closing balance of debtors should be taken as the denominator. A higher debtors turnover ratio is an indicator of sound credit management policy. A debtor turnover ratio of 10 – 12 is considered as ideal.

8.2.4 DEBTORS VELOCITY / DEBT COLLECTION PERIOD

It is expressed in terms of number of days required for the debtors to get converted into cash; it is called debt collection period. It is calculated as

$$\text{Debt Collection Period} = \frac{\text{Number of days in a year}}{\text{Debtors Turnover Ratio}}$$

A low debt collection period is good for the company and the ideal debt collection period is 30-36 days.

8.2.5 CREDITORS / ACCOUNTS PAYABLE TURNOVER RATIO

It expresses the relationship between creditors and purchases. This ratio gives the average credit period enjoyed from the creditors and is calculated as under:

$$= \frac{\text{Net Credit Purchases}}{\text{Average Creditors}}$$

Net credit purchases imply credit purchases less purchases returns. In case of insufficiency of information regarding credit purchases, total purchases may be taken in the numerator. Average creditors include bills payable and in case information regarding average creditors cannot be found, closing balance of creditors should be taken in the denominator. A high ratio indicates that creditors are not paid in time, while a low ratio gives an idea that business is not taking full advantages of credit policy allowed by creditors and inability in meeting the firms obligations in time.

8.2.6 CREDITORS VELOCITY / CREDITORS CONVERSION PERIOD / AVERAGE PAYMENT PERIOD

Indicates the number of days taken by the business to payoff its debts and is calculated as:

difficulties. On the other hand, lower working capital turnover ratio indicates that working capital is not efficiently utilized.

8.2.11 CAPITAL TURNOVER RATIO

It shows the efficiency of capital employed in the business by computing how many times capital employed is turned over in a stated period.

$$\text{Capital Turnover Ratio} = \frac{\text{Net Sales}}{\text{Capital Employed}}$$

Where,

$$\text{Capital Employed} = \text{Equity Share Capital} + \text{Preference Share Capital} + \text{Reserves \& Surplus} + \text{Debentures and long term debts} - \text{Fictitious Assets.}$$

A higher ratio indicates greater profits for the company while a lower ratio means that sufficient sales are not being made and profits are lower.

Illustration - 1

Cost of goods sold: Rs. 5,00,000; Opening Stock: 50,000; Closing Stock: Rs. 60,000. Calculate Stock Turnover Ratio and Stock Velocity in days, weeks and months.

Solution

$$\text{Stock Turnover Ratio} = \frac{\text{Cost of Goods Sold}}{\text{Average Stock}}$$

$$\text{Average Stock} = \frac{\text{Opening Stock} + \text{Closing Stock}}{2}$$

$$= \frac{50,000 + 60,000}{2}$$

$$= \text{Rs. } 55,000$$

$$\text{Therefore, Stock Turnover Ratio} = \frac{5,00,000}{55,000}$$

$$= 9.09 \text{ times}$$

$$\text{Stock Velocity in days} = \frac{\text{Average Stock} \times 365}{\text{Cost of goods sold}}$$

$$= \frac{55,000 \times 365}{55,000} = 40.15 \text{ days}$$

$$\text{Stock Velocity in weeks} = \frac{\text{Average Stock} \times 52}{\text{Cost of goods sold}}$$

$$= \frac{55,000 \times 52}{5,00,000} = 5.72 \text{ week}$$

$$2x = 15,000$$

$$\text{Therefore, } x = \frac{15,000}{2}$$

$$= \text{Rs. } 7,500$$

Therefore, Opening Stock = 7,500

Closing Stock = 7,500 + 10,000

$$= \text{Rs. } 17,500$$

$$\begin{aligned} \text{Stock Velocity} &= \frac{\text{Average Stock} \times 12}{\text{Cost of goods sold}} \\ &= \frac{12,500 \times 12}{75,000} = 2 \text{ months} \end{aligned}$$

Activity - 1

Stock Turnover Ratio = 6 times, Calculate Stock Velocity.

Stock Velocity = No. of days or weeks or months in a year / Stock Turnover

$$\text{Stock Velocity in days} = \frac{365}{6} = 60.83 \text{ days}$$

$$\text{Stock Velocity in months} = \frac{12}{6} = 2 \text{ months}$$

$$\text{Stock Velocity in weeks} = \frac{52}{6} = 8.67 \text{ weeks}$$

Illustration - 3

Following is the summarized P&L a/c for the year ending 31st March, 2003 and the Balance Sheet as at that date:

Profit and Loss a/c

Particulars	Amount Rs.	Particulars	Amount Rs.
To Opening stock	10,000	By Sales	1,00,000
To Purchases	55,000	By Closing Stock	15,000
To Gross Profit c/d.	50,000		
	<u>1,15,000</u>		<u>1,15,000</u>
To Administration Expenses	1,5,000	By Gross Profit b/d	50,000

$$= \frac{10,000 + 15,000}{2} = \text{Rs. } 12,500$$

$$\text{Stock Turnover Ratio} = \frac{50,000}{12,500} = 4 \text{ times}$$

$$\begin{aligned} \text{Stock Velocity} &= \frac{\text{Average Stock} \times 365}{\text{Cost of goods sold}} \\ &= \frac{12,500 \times 365}{50,000} = 91.25 \text{ days} \end{aligned}$$

Or

No. of days in a year / Stock Turnover Ratio

$$365 / 4 = 91.25 \text{ days}$$

(b) Calculating Debtors Turnover Ratio & Velocity:

$$\begin{aligned} \text{Debtors Turnover Ratio} &= \frac{\text{Net Credit Sales}}{\text{Avg. Trade Debtors}} \\ &= \frac{1,00,000}{12,500} = 8 \text{ times} \end{aligned}$$

$$\begin{aligned} \text{Debtors Velocity} &= \frac{\text{Average Trade Debtors} \times 365}{\text{Net Credit Sales}} \\ &= \frac{12,500 \times 365}{1,00,000} = 45.625 \text{ days} \end{aligned}$$

(c) Calculating Creditors Turnover Ratio & Velocity:

$$\begin{aligned} \text{Creditors Turnover Ratio} &= \frac{\text{Net Credit Purchases}}{\text{Avg. Trade Creditors}} \\ &= \frac{40,000}{15,000} = 2.67 \text{ times} \end{aligned}$$

$$\begin{aligned} \text{Creditors Velocity} &= \frac{\text{Avg. Trade Creditors} \times 365}{\text{Net Credit Purchases}} \\ &= \frac{15,000 \times 365}{40,000} = 136.875 \text{ days} \end{aligned}$$

(d) Calculating Working Capital Turnover Ratio:

$$\text{Working Capital Turnover Ratio} = \frac{\text{Net Sales}}{\text{Working Capital}}$$

(h) Calculating Capital Turnover Ratio:

$$\text{Capital Turnover Ratio} = \frac{\text{Net Sales}}{\text{Capital Employed}}$$

Capital Employed = Equity Share Capital + Preference Share Capital + Reserves & Surplus + Debentures & Long term debts - Fictitious Assets.

$$= 1,00,000 + 20,000 + \text{nil} - \text{nil}$$

$$= \text{Rs. } 1,20,000$$

$$\text{Capital Turnover Ratio} = \frac{1,00,000}{1,20,000} = 0.83 \text{ times}$$

Illustration - 4

The following are the ratios relating to the activities of Ranjani Traders Ltd.

Stock Velocity = 6 months

Creditors Velocity = 2 months

Debtors Velocity = 3 months

Gross Profit = 25%

Gross profit amount = Rs.4, 00,000

Closing stock is 10,000 above opening stock

Bills Receivables = Rs. 25,000

Bills payable = Rs. 10,000

Calculate a) Sales b) Average Stock, Opening and Closing stocks C) Purchases d) Sundry Creditors e) Sundry Debtors

Solution

a) Calculating Sales:

Given Gross Profit for 25% = Rs.4, 00,000

For Sales of 100% = ?

$$\frac{4,00,000 \times 100}{25} = \text{Rs. } 16, 00,000$$

Therefore, Sales = Rs.16, 00,000

Cost of goods sold = Sales - Gross Profit

$$= 16,00,000 - 4,00,000$$

$$= \text{Rs. } 12, 00,000$$

Given creditors velocity = 2 months

$$2 = \frac{\text{Closing creditory} \times 12}{12,10,000}$$

$$2 \times 12,10,000 = \text{Closing creditory} \times 12$$

$$24,20,000 = \text{Closing creditory} \times 12$$

$$\text{Therefore, Closing creditory} = \frac{24,20,000}{12} = \text{Rs. } 2,01,667$$

$$\begin{aligned} \text{Sundry Creditors} &= \text{Closing Creditors} - \text{Bills Payable} \\ &= 2,01,667 - 10,000 \\ &= \text{Rs. } 1,91,667 \end{aligned}$$

e) Calculating Sundry Debtors:

Given Debtors Velocity = 3 months

$$\text{Debtors velocity} = \frac{\text{Closing Debtors} \times 12}{16,00,000}$$

$$3 = \frac{\text{Closing Debtors} \times 12}{\text{Net Credit Sales}}$$

$$48,00,000 = \text{Closing Debtors} \times 12$$

$$\text{Closing Debtors} = \frac{48,00,000}{12}$$

$$= \text{Rs. } 4,00,000$$

$$\text{Therefore, Closing Debtors} = 4,00,000$$

$$\begin{aligned} \text{Sundry Debtors} &= \text{Closing Debtors} - \text{Bills Receivables} \\ &= 4,00,000 - 25,000 \\ &= \text{Rs. } 3,75,000 \end{aligned}$$

Illustration -5

From the following particulars, make up a Balance Sheet.

Stock Turnover = 6 times; Capital Turnover = 2 times; Debtors velocity = 2 months; Creditors velocity = 73 days; Gross Margin = Rs. 60,000; Reserves & Surplus = Rs. 20,000; Closing stock is Rs. 5,000 in excess of opening stock. Gross Profit is 20% of Sales and Fixed Assets turnover is 4 times.

Solution

a) Calculation of Sales:

$$\text{Given Gross Profit for } 20\% = 60,000$$

$$\text{For Sales of } 100\% = ?$$

$$= \frac{60,000 \times 100}{20} = \text{Rs. } 3,00,000$$

$$\text{Therefore, Sales} = \text{Rs. } 3,00,000$$

Therefore, Share Capital = 1,50,000 – 20,000

= Rs. 1,30,000

e) Calculation of Fixed Assets:

Given Fixed Assets Turnover Ratio = 4 times

$$\text{Fixed Assets Turnover Ratio} = \frac{\text{Total Sales}}{\text{Fixed Assets}}$$

$$4 = \frac{3,00,000}{\text{Fixed Assets}}$$

$$4 \times \text{Fixed Assets} = 3,00,000$$

Therefore, Fixed Assets = 3,00,000 / 4 = Rs. 75,000

f) Calculation of Sundry Debtors:

$$\text{Debtors Velocity} = \frac{\text{Closing Debtors} \times 12}{\text{Fixed Assets}}$$

$$2 = \frac{\text{Closing Debtors} \times 12}{3,00,000}$$

$$6,00,000 = \text{Closing Debtors} \times 12$$

Therefore, Closing Debtors = 6,00,000 / 12 = Rs. 50,000

g) Calculation of Credit purchases:

Cost of goods sold = Opening stock + Purchases + Direct expenses – Closing stock

$$2,40,000 = 37,500 + \text{Purchases} + \text{nil} - 42,500$$

$$2,40,000 = \text{Purchases} - 5,000$$

$$\text{Purchases} = 2,40,000 + 5,000$$

$$= \text{Rs. } 2,45,000$$

h) Calculating Creditors:-

$$\text{Creditors Velocity} = \frac{\text{Closing Creditors} \times 365}{\text{Net Credit Purchases}}$$

Given Creditors velocity = 73 days

$$73 = \frac{\text{Closing Creditors} \times 365}{2,45,000}$$

$$73 \times 2,45,000 = \text{Closing creditors} \times 365$$

$$1,78,85,000 = \text{Closing creditors} \times 365$$

Therefore, Closing creditors = 1,78,85,000 / 365 = Rs. 49,000

8.3 LIQUIDITY RATIOS

These ratios measure the short-term solvency of the firm. The short-term creditors, like suppliers of goods, commercial banks providing short-term credit facility, are primarily interested in the company's ability to meet its current or short-term obligations. The ability to meet current or short-term obligations is known as liquidity. The short-term obligations of a company can be met only when it has sufficient liquid funds. The following are the important liquidity ratios.

8.3.1 CURRENT RATIO / WORKING CAPITAL RATIO

This ratio establishes the relationship between current assets and current liabilities. It is the most widely used ratio, which studies the short-term financial position of the company.

$$\text{Current Ratio} = \frac{\text{Quick assets}}{\text{Quick Liabilities}}$$

Current Assets are the assets, which can be converted into cash within one year.

The following are the current assets:

i) Cash in hand, ii) Cash at Bank, iii) Inventory/Stock (Raw materials, Work in progress, Finished goods, Spare parts), iv) Sundry Debtors/ Book Debts, v) Bills Receivables or Notes Receivables, vi) Temporary Investments/Marketable Investments/Short term Investments, vii) Outstanding Incomes, viii) Prepaid Expenses, etc.

Current Liabilities are those liabilities, which are to be settled within a year. The following are the current liabilities:

i) Creditors, ii) Bills Payable / Notes Payable, iii) Outstanding Expenses, iv) Prepaid Incomes, v) Bank Overdraft, vi) Tax Payable / Unpaid Tax / Provision for tax, vii) Dividends Payable/Unpaid dividends /Unclaimed dividends / Proposed dividends, viii) Short-term loans and advances, etc.

Standard current ratio is 2:1 i.e., current assets should be twice of current liabilities. If current assets are 2 times of current liabilities, then the business operations will not be adversely affected when current liabilities will be paid. If the ratio is less than 2, the business doesn't enjoy adequate liquidity, thus leading to difficulty in settling current liabilities and day-to-day operations of the business may suffer. If the ratio is higher than 2, though it may be comfortable for the creditors but for the concern, it is an indicator of idle funds and has not invested them properly. If a business has dealings with its banks for meeting its working capital requirements at short notice, a current ratio of 1:33 is adequate. High current ratio may not necessarily indicate

liquidity and be an encouraging signal from the viewpoint of short-term creditors. All current assets cannot be treated as investments, which are easily marketable and sold when cash is required. For this purpose, the liquid ratio works out.

8.3.2 LIQUID/QUICK RATIO

It is the ratio of liquid assets to liquid liabilities. It is an acid test of a concern's financial soundness.

$$\text{Liquid /Quick Ratio} = \frac{\text{Absolute Quick Assets}}{\text{Current Liabilities}}$$

Quick assets are those assets, which can be very quickly converted into cash without much loss. It includes all current assets except stock and prepaid expenses.

$$\text{Quick assets} = \text{Current assets} - (\text{Stock} + \text{Prepaid expenses}).$$

Solution

i) Calculating Current Ratio:

$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

Current Assets = Prepaid rent + Sundry Debtors + Bills Receivables + Cash in hand

Cash at Bank + Stock

$$= 5,000 + 1,50,000 + 1,00,000 + 40,000 + 20,000 + 60,000$$

$$= 4,05,000$$

Current Liabilities = Bank overdraft + Sundry Creditors + Bills Payables + Trade payables

$$= 75,000 + 60,000 + 30,000 + 20,000$$

$$= 1,85,000$$

$$\text{Current Ratio} = \frac{4,05,000}{1,85,000} = 2.189$$

ii) Calculation of Quick Ratio:

$$\text{Quick Ratio} = \frac{\text{Quick Assets}}{\text{Quick Liabilities}}$$

Quick Assets = Current Assets - Stock

$$= 4,05,000 - 1,00,000$$

$$= 3,05,000$$

Quick Liabilities = Current liabilities - Bank Overdraft

$$= 1,85,000 - 75,000$$

$$= 1,10,000$$

$$\text{Therefore, Quick Ratio} = \frac{3,05,000}{1,10,000} = 2.77$$

iii) Calculating Absolute Quick Ratio:

$$\text{Absolute Quick Ratio} = \frac{\text{Absolute Quick Assets}}{\text{Current Liabilities}}$$

Absolute Quick Assets = Cash in hand + Cash at Bank

$$= 50,000 + 60,000$$

$$= 1,10,000$$

$$\text{Therefore, Absolute Quick Ratio} = \frac{1,10,000}{1,85,000} = 0.594$$

Comment: The Short-term financial position, Liquidity position of the Company is Satisfactory.

$$= 1,67,000$$

$$\text{Therefore, Quick Ratio} = \frac{1,65,000}{1,67,000} = 0.988$$

C) Calculating Absolute Quick Ratio:

$$\text{Absolute Quick Ratio} = \frac{\text{Absolute Quick Assets}}{\text{Current Liabilities}}$$

$$\begin{aligned}\text{Absolute Quick Assets} &= \text{Cash in hand} + \text{Cash at Bank} \\ &= 18,000 + 5,000 \\ &= 23,000\end{aligned}$$

$$\text{Therefore, Quick Ratio} = \frac{23,000}{1,72,000} = 0.13$$

ALLWYN LTD.

A) Calculating Current Ratio:

$$\text{Current Assets} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

$$\begin{aligned}\text{Current Assets} &= \text{Sundry Debtors} + \text{Cash in hand} + \text{Short term Investments} + \text{Stock} \\ &= 3,20,000 + 14,000 + 8,000 + 5,40,000 \\ &= 8,82,000\end{aligned}$$

$$\begin{aligned}\text{Current Liabilities} &= \text{Sundry Creditors} + \text{Bills Payables} + \text{Tax payable} + \text{Bank Overdraft} \\ &\quad + \text{Outstanding expenses} \\ &= 40,000 + 10,000 + 10,000 + 6,000 + 12,500 \\ &= 78,500\end{aligned}$$

$$\text{Current Ratio} = \frac{8,82,000}{78,500} = 11.234$$

B) Calculation Quick Ratio

$$\text{Quick Ratio} = \frac{\text{Quick Assets}}{\text{Quick Liabilities}}$$

$$\begin{aligned}\text{Quick Assets} &= \text{Current Assets} - \text{Stock} \\ &= 8,82,000 - 5,40,000 \\ &= 3,42,000\end{aligned}$$

$$\begin{aligned}\text{Quick Liabilities} &= \text{Current liabilities} - \text{Bank Overdraft} \\ &= 78,500 - 6,000 \\ &= 72,500\end{aligned}$$

8.4.1 DEBT-EQUITY RATIO

The debt-equity ratio measures the long-term financial solvency of a business concern. This ratio is popularly known as "External-Internal ratio". This ratio relates the Owner's stake in the business vis-à-vis that of outsiders. This ratio reflects the relative claims of creditors and shareholders against the assets of the unit. This ratio can also be viewed as indicating the relative proportions of debts and equity in financing the assets of the business unit. It is calculated by dividing the external equities by internal equities.

$$\begin{aligned} \text{Debt-equity ratio} &= \frac{\text{External equities}}{\text{Internal equities}} \\ &\text{OR} \\ &= \frac{\text{Outsiders fund}}{\text{Shareholders fund}} \\ &\text{OR} \\ &= \frac{\text{Long-term debt}}{\text{Shareholders equity}} \end{aligned}$$

External equities or Outsiders fund include all debts, whether long-term or short-term or whether in the form of Mortgages, Bills or Debentures.

Internal equities or Shareholders fund include Preference Share Capital, Equity Share Capital, Capital Reserve, Retained Earnings and any other reserves representing the accumulated profits of the business unit.

Debt-equity ratio of 2:1 is considered ideal. A firm with a Debt-equity ratio of 2 or less, exposes its creditors to relatively lesser risk. A firm with a high Debt-Equity Ratio exposes its creditors to greater risk.

8.4.2 PROPRIETARY RATIO

It expresses the relationship between Net worth and Total Assets. A high Proprietary Ratio is an indicator of strong financial position of business. The higher the ratio, the better it is.

Net worth = Equity Share capital + Preference Share Capital + Reserves – Fictitious Assets

Total assets = Fixed assets + Current assets (excluding fictitious assets)

NOTE: Reserves earmarked specifically for a particular purpose should not be included in calculation of Net worth.

$$\text{Proprietary Ratio} = \frac{\text{Net worth}}{\text{Total Assets}}$$

8.4.3 CAPITAL GEARING RATIO

For the purpose of computing this ratio, total capital is classified into two broad categories as funds bearing fixed interest and of fixed dividend; and other funds not bearing any fixed interest or fixed dividend. The term 'capital gearing' is used to describe the relationship between fixed interest and/ or fixed dividend bearing securities and the Equity shareholders funds. This ratio therefore, establishes a meaningful relationship between the funds bearing fixed interest and / or fixed dividend on one hand and the equity shareholders' fund on the other. It can be calculated as shown below:

Illustration - 8

From the following balance sheet of Vasavi limited as on 31st March, 2004, calculate the relevant leverage ratios:

Liabilities	Amount Rs.	Assets	Amount Rs.
Equity Share capital	2,00,000	Fixed Assets	17,50,000
9% Preference Capital	1,00,000	Current Assets	2,00,000
Reserves & Surplus	8,00,000	Miscellaneous Expenses	75,000
12% Debentures	8,00,000		
Current liabilities	81,000		
Provisions	44,000		
	<u>20,25,000</u>		<u>20,25,000</u>

During the year ended 31st March, 2004, Vasavi Limited reported a profit before tax of Rs.2,00,000 after providing for interest and debentures. Assume tax rate to be 50%.

Solution

$$\text{Debt-Equity Ratio} = \frac{\text{Long-term Liabilities}}{\text{Shareholders funds}}$$

$$\text{Long-term liabilities} = 12\% \text{ Debentures Rs. } 8,00,000$$

$$\begin{aligned} \text{Shareholders fund} &= \text{Equity share capital} + \text{Preference share capital} + \text{Reserves \& Surplus} - \text{Fictitious assets} \\ &= 2,00,000 + 1,00,000 + 8,00,000 - 75,000 \\ &= \text{Rs. } 10,25,000 \end{aligned}$$

$$\text{Debt-Equity Ratio} = \frac{8,00,000}{10,25,000} = 0.78$$

$$\text{Proprietary Ratio} = \frac{\text{Net Worth}}{\text{Total Assets}}$$

$$\text{Net worth} = \text{Shareholders funds} = \text{Rs. } 10,25,000$$

$$\begin{aligned} \text{Total Assets} &= \text{Fixed assets} + \text{Current assets} \\ &= 17,50,000 + 2,00,000 \\ &= \text{Rs. } 19,50,000 \end{aligned}$$

$$\text{Proprietary Ratio} = \frac{10,25,000}{19,50,000} = 0.56$$

$$\text{Capital Gearing Ratio} = \frac{\text{Funds bearing fixed interest and fixed dividend}}{\text{Equity shareholders funds}}$$

10% Debentures	8,00,000	
Current liabilities	80,000	
Provisions	50,000	
	21,30,000	21,30,000

During the year ended 31st March 2003, Chaitanya Ltd., reported a profit before tax of Rs. 2,00,000 after providing for interest and debentures. Assume tax rate to be 50%.

Illustration - 9

The following data is of Padma Ltd., for the year 2003. Using the data, fill up the Balance Sheet.

Long term debt to Net worth = $\frac{1}{2}$

Total Asset Turnover Ratio = 2.5

Average Collection period = 18 days

Inventory Turnover Ratio = 9 times

Quick Ratio = 1

Liabilities	Amount Rs.	Assets	Amount Rs.
Bills payable	XX	Cash	XX
Long term debt	XX	Debtors	XX
Equity Capital	1,00,000	Stock	1,00,000
Reserves	1,00,000	Plant & Machinery	XX
	4,00,000		4,00,000

Solution

Calculating Net worth:

Net worth = Equity Share Capital + Preference Share Capital + Reserves & Surplus -

Fictitious Assets

= 1,00,000 + nil + 1,00,000 - nil

= 2,00,000

Therefore, Cost of goods sold = Rs.9, 00,000

Calculating Quick Assets:

Quick Liabilities = Bills payable = 1,00,000

$$\text{Quick Ratio} = \frac{\text{Quick Assets}}{\text{Current Liabilities}}$$

$$1 = \frac{\text{Quick Assets}}{1,00,000}$$

Therefore, Quick Assets = $1 \times 1,00,000 = \text{Rs. } 1,00,000$

Calculating Cash:

Quick Assets = Cash + Debtors

$$1,00,000 = \text{Cash} + 49,315$$

$$\text{Cash} = 1,00,000 - 49,315 = \text{Rs. } 50,685$$

Liabilities	Amount Rs.	Assets	Amount Rs.
Bills Payable	1,00,000	Cash	50,685
Long Term Debts	1,00,000	Debtors	49,315
Equity Capital	1,00,000	Stock	1,00,000
Reserves	1,00,000	Plant & Machinery (balance)	2,00,000
Total	4,00,000	Total	4,00,000

Illustration - 10

With the following ratios, prepare a Balance Sheet.

Gross Profit	Rs. 80,000
Gross Profit to cost of goods sold	1/3
Debtors collection period	72 days
Stock turnover ratio	6 times
Opening Stock	36,000
Bills Receivable	20,000
Account Payable velocity	90 days
Fixed Assets turnover ratio	8 times
Bills Payable	5,000
Current Assets	1,40,000

Assume 360 days in a year

Calculating Sundry Creditors:

$$\begin{aligned} \text{Creditors Velocity} &= \frac{\text{Closing Creditors} \times 360}{\text{Net Credit Purchases}} \\ 90 &= \frac{\text{Closing Creditors} \times 360}{2,48,000} \end{aligned}$$

$$\begin{aligned} \text{Closing Creditors} &= 90 \times 2,48,000 / 360 \\ &= 2,23,20,000 / 360 = \text{Rs.} 62,000 \end{aligned}$$

$$\begin{aligned} \text{Sundry Creditors} &= \text{Closing Creditors} - \text{Bills payable} \\ &= 62,000 - 5,000 = \text{Rs.} 57,000 \end{aligned}$$

Calculating Fixed Assets:

$$\text{Given Sales / Fixed Assets} = 8$$

$$8 \times \text{Fixed Assets} = 3,20,000$$

$$\text{Therefore, Fixed Assets} = 3,20,000 / 8 = \text{Rs.} 40,000$$

Liabilities	Amount Rs.	Assets	Amount Rs.
Creditors	57,000	Fixed Assets	40,000
Bills Payable	5,000	Current Assets:	
Other Liabilities	1,18,000	Stock	44,000
		Debtors	44,000
		Bills Receivables	20,000
		Cash	32,000
			1,40,000
Total	1,80,000	Total	1,80,000

Illustration - 11

The following information is given below about a company for the year ending 31st March, 2004.

(i) Stock Turnover Ratio = 6 times; (ii) GP Ratio = 20% on sales; (iii) Sales for 2004 = Rs. 6,00,000; (iv) Closing Stock is Rs. 20,000 more than opening stock; (v) Opening Creditors Rs. 40,000; Closing Creditors = Rs. 60,000; Trade Debtors at the end = Rs. 1,20,000; and (viii) Net Working Capital = Rs. 1,00,000.

Find out: (a) Average Stock; (b) Purchases; (c) Creditors Turnover Ratio; (d) Average Payment Period; (e) Average Collection Period; and (f) Working Capital Turnover Ratio.

Solution

$$\begin{aligned} \text{Cost of Goods Sold} &= \text{Sales} - \text{GP} \\ &= \text{Rs.} 6,00,000 - (20\% \text{ of sales}) \end{aligned}$$

- d) Average Payment Period = $\frac{\text{Average Trade Creditors} \times \text{No. of Working Days}}{\text{Net Annual Purchases}}$
 $= \frac{50,000 \times 365}{5,00,000} = 36.5 \text{ days or } 37 \text{ days.}$
- e) Average Collection Period = $\frac{\text{Average Trade Debtors} \times \text{No. of Working Days}}{\text{Net Annual Sales}}$
 $= \frac{1,20,000 \times 365}{6,00,000}$
 $= 73 \text{ days.}$
- f) Working Capital Turnover Ratio = $\frac{\text{Cost of Goods Sold}}{\text{Net Working Capital}}$
 $= \frac{4,80,000}{1,00,000}$
 $= 4.8 \text{ times.}$

Illustration - 12

You are given the following information relating to financial statements of GMR Ltd. Prepare Trading, Profit and Loss A/c. and Balance Sheet.

Net Current Assets	Rs. 2,00,000
Paid-up Capital	Rs. 6,00,000
Current Ratio	1.8 : 1
Liquid Ratio	1.35 : 1
Fixed Assets to Shareholders' Equity	80%
Gross Profit Ratio	25%
Net Profit to Paid-up Capital	20%
Stock Turnover	5 times
Average Age of Outstanding Creditors	36 1/2 days

Solution

- i) Current Assets:

Since Current Ratio is 1.8 : 1, Current Assets will be $1.8 - 1 = 0.8$.

$$\begin{aligned} \text{Current Assets} &= \frac{\text{Net Current Assets} \times 1.8}{0.8} \\ &= \frac{2,00,000 \times 1.8}{0.8} = \text{Rs. } 4,50,000 \end{aligned}$$

$$= \frac{2,00,000 \times 100}{20} = \text{Rs. } 10,00,000$$

$$\text{Fixed Assets} = \frac{10,00,000 \times 80}{100} = \text{Rs. } 8,00,000$$

$$\text{xiii) Reserves and Surplus} = \text{Rs. } 10,00,000 - 6,00,000 = \text{Rs. } 4,00,000.$$

Trading and Profit & Loss A/c.

	Rs.		Rs.
To Cost of Sales	5,62,500	By Sales	7,50,000
To Gross Profit	1,87,500		
	7,50,000		7,50,000
To Opening Expenses	67,500	By Gross Profit	1,87,500
To Net Profit	1,20,000		
	1,87,500		1,87,500

Balance Sheet

	Rs.		Rs.
Share Capital	6,00,000	Fixed Assets	8,00,000
Reserves & Surplus	4,00,000	Stock	1,12,500
Credit Liabilities	2,50,000	Debtors	75,000
		Cash	2,62,500
	12,50,000		12,50,000

Activity - 4

From the following information, prepare balance sheet.

Gross profit (20% of sales)	Rs. 1,20,000
Shareholders' equity	Rs. 1,00,000
Credit sales to total sales	80%
Total assets turnover	3 times
Stock turnover	8 times
Average collection period (360 days in a year)	18 days
Current ratio	1.6 : 1
Long-term debt to equity	40%

Altman employed multiple discriminant analysis to predict bankruptcy, using various financial ratios.

Financial ratio analysis focuses on those ratios that really have underlying predictive ability.

8.8 SUMMARY

A wealth of information contained in Financial Statements, if properly analysed and interpreted with Ratios, can provide valuable insights into a firm's financial performance.

Turnover Ratios measure, how efficiently the assets of the company are employed. These ratios relate the level of activity and the level of various assets.

Liquidity Ratios show the ability of the firm to meet its maturing current obligation. A 2:1 ratio is considered as an ideal one.

Leverage Ratios help in assessing the risk arising from the use of fixed obligation sources.

Coverage Ratios show the relationship between debt – servicing commitments and the sources for meeting these commitments.

In spite of ratios suffering from the same limitations of Financial Statements as they are based on Financial Statements, still, ratios can be used as predictors of corporate health.

Ratio analysis is useful in spite of its limitations. But, analysts should be aware of them and make adjustments as necessary. Ratio analysis conducted in a mechanical and unthinking manner is dangerous. But, used intelligently, ratios can provide useful insights into a firm's operations.

8.9 MODEL ANSWERS TO ACTIVITIES

1. Stock Velocity = No. of days or weeks or months in a year / Stock Turnover

$$\text{Stock Velocity in days} = \frac{365}{6} = 60.83 \text{ days}$$

$$\text{Stock Velocity in months} = \frac{12}{6} = 2 \text{ months}$$

$$\text{Stock Velocity in weeks} = \frac{52}{6} = 8.67 \text{ weeks}$$

2. Working Capital = Current Assets - Current Liabilities

$$10,000 = \text{Current Assets} - \text{Current Liabilities}$$

$$\text{Current Assets} = \text{Current Liabilities} + 10,000$$

$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

$$2 = \frac{\text{Current Liabilities} + 10,000}{\text{Current Liabilities}}$$

$$\text{Capital Gearing Ratio} = \frac{9,00,000}{10,20,000} = 0.88$$

$$\text{Interest -Coverage Ratio} = \frac{\text{PBIT}}{\text{Fixed Interest Charges}}$$

$$\text{PBIT} = \text{PBT} + \text{Interest}$$

$$= 2,00,000 + 80,000 = \text{Rs. } 2,80,000$$

$$\text{Interest} = 80,000$$

$$\text{Interest coverage ratio} = \frac{2,80,000}{80,000} = 3.5$$

$$\text{Dividend Coverage Ratio} = \frac{\text{PAT}}{\text{Fixed Preference Dividend}}$$

$$\text{PAT} = \text{PBT} - \text{Tax} = \text{Rs. } 20,00,000$$

$$\text{Fixed preference dividend} = 7\% \text{ of Rs. } 1,00,000 = \text{Rs. } 7,000$$

$$\text{Dividend Coverage Ratio} = \frac{2,00,000}{7,000} = 28.57$$

4.

$$\text{i) Sales} = \frac{\text{Gross Profit}}{\text{Gross Profit Ratio}} = \frac{1,20,000 \times 100}{20} = \text{Rs. } 6,00,000$$

$$\text{ii) Cost of Sales} = 6,00,000 - 1,20,000 = 4,80,000$$

$$\text{iii) Credit Sales} = \frac{\text{Total Sales} \times 80}{100} = \frac{6,00,000 \times 100}{100} = \text{Rs. } 4,80,000$$

$$\text{iv) Total Assets} = \frac{\text{Sales}}{\text{Total assets turnover ratio}} = \frac{6,00,000}{3} = \text{Rs. } 2,00,000$$

$$\text{v) Stock} = \frac{\text{Cost of Sales}}{\text{Stock Turnover}} = \frac{4,80,000}{8} = \text{Rs. } 60,000$$

$$\text{vi) Debtors} = \frac{\text{Credit sales} \times \text{A.C.P.}}{360} = \frac{4,80,000}{360} \times 18 = \text{Rs. } 24,000$$

$$\text{vii) Long-term Debt} = \frac{\text{Shareholders' equity} \times 40}{100} = \frac{1,00,000 \times 40}{100} = \text{Rs. } 40,000$$

$$\begin{aligned} \text{viii) Current Liabilities} &= \text{Total Assets} - \text{Shareholders' Equity} - \text{Long-term Debt} \\ &= 2,00,000 - 1,00,000 - 40,000 = \text{Rs. } 60,000 \end{aligned}$$

$$\begin{aligned} \text{ix) Current Assets} &= \text{Current Liabilities} \times \text{Current Ratio} \\ &= 60,000 \times 1.6 = \text{Rs. } 96,000 \end{aligned}$$

$$\begin{aligned} \text{xi) Cash} &= \text{Current Assets} - \text{Debtors} - \text{Stock} \\ &= 96,000 - 24,000 - 60,000 = \text{Rs. } 12,000. \end{aligned}$$

EXERCISES

- Calculate (a) Current assets (b) Current liabilities (c) Quick assets from the following:
Current ratio 2.2: 1; Working capital Rs. 1,00,000; Stock Rs.20, 000.
(Ans: (a) Rs. 1,83,333; (b) Rs. 83,333; (c) Rs. 1,63,333)
- Calculate stock velocity in days, months, weeks given the stock turnover ratio = 8 times
(Ans: 45.62 days; 1.5 months; 6.5 weeks)
- Current Ratio = 1.75:1; Working Capital: Rs. 1,00,000; Calculate Current Assets and Current Liabilities.
(Ans: Current Assets Rs. 2,33,333; Current Liabilities Rs. 1,33,333)
- Equity Share capital Rs.1, 50,000; 8% Pref. Share capital Rs. 1,00,000; Reserves Rs. 50,000; 10% Debentures Rs. 2,00,000; Current assets Rs. 3,00,000; Fixed assets Rs. 2,00,000. Calculate Proprietary Ratio.
(Ans: 0.6:1)
- Given 9% Preference Share Capital Rs. 2, 00,000; 10% Debentures Rs.1, 00,000; Profit Before Tax Rs.80,000. Calculate coverage ratios.
(Ans: Interest coverage ratio 0.9; Dividend coverage ratio 4.44)
- From the following balance sheet of Shanti Ltd. as on 31st March 2003 calculate the relevant leverage ratios:

Liabilities	Amount Rs.	Assets	Amount Rs.
Equity Share capital	1,00,000	Fixed Assets	18,75,000
10% Preference Capital	2,00,000	Current Assets	1,00,000
Reserves & Surplus	7,00,000	Miscellaneous Expenses	50,000
11% Debentures	9,00,000		
Current liabilities	85,000		
Provisions	40,000		
	<u>20,25,000</u>		<u>20,25,000</u>

Additional information

PBT Rs. 2,50,000 after providing for interest on debentures.

(Ans: Debt-equity ratio 0.94; Proprietary ratio 0.48; Capital gearing ratio 1.46;
Interest coverage ratio 3.52; Dividend coverage ratio 12.5)

- From the Balance sheet, calculate Leverage ratios:

Liabilities	Amount Rs.	Assets	Amount Rs.
Equity Share capital	2,00,000	Fixed Assets	4,00,000
9% Preference Capital	1,00,000	Current Assets	2,00,000

10. From the following information, make out a Balance Sheet.

Gross Profit = 80,000; Gross profit to Cost of goods sold = 1/3; Debtors Velocity = 72 days (Assume 360 days in a year); Bills receivable = 20,000; Fixed Assets Turnover Ratio = 8 times; Stock Turnover Ratio = 6 times; Opening Stock = 36,000; Creditors Velocity = 90days; Bills payable = 5,000

[Ans: Balance sheet total: Rs. 1, 48,000; Share capital: Rs. 86,849 (Bal. Figure)]

11. From the following information, make out a Balance Sheet.

Current ratio = 2.5; Quick ratio = 1.5; Working capital = Rs. 60,000; Proprietary ratio = 0.75; Reserves & Surplus = Rs. 40,000; Bank overdraft = Rs. 10,000.

There are no long-term loans, investments, and fictitious assets.

(Ans: Balance sheet total = Rs. 2,80,000)

12. Prepare Balance sheet of Sridhar Ltd.

Current ratio 2.5; Quick ratio 1.5; Net working capital Rs. 6,00,000; Stock turnover ratio 5 times; Gross profit ratio 20%; Turnover to fixed assets 2 times; Avg. collection period 2.4 months; Fixed assets to net worth 0.8; Long-term debt to net worth 7/25.

(Ans: Balance sheet total Rs.24, 00,000; Sundry assets Rs. 1,50,000 (balancing figure))

13. Using the ratios given below, complete the given incomplete balance sheet:

Sales / Total assets = 3
Sales / Fixed assets = 5
Sales / Current assets = 7.5
Sales / Inventory = 20
Sales / Debtors = 15
Current ratio = 2
Total assets / Net worth = 2.5
Sales = Rs. 36,00,000

[Ans: Balance Sheet total = 12,00,000; Long term debt = 4,80,000 (Bal. Fig)]

14. Assume that a firm has equity of Rs. 1,00,000. Complete the Balance Sheet.

Current Debt to total debt 0.4
Fixed Assets to Owners equity 0.6
Total debt to owners equity 0.6
Total assets turnover ratio 2 times
Inventory turnover ratio 8 times

Debts collection period	1 1/2 months
Turnover to fixed assets	1.5
Ratio of reserves to capital	33% (i.e., 1/3)
Fixed assets to net worth	0.83 (i.e., 5/6)

The term turnover means cost of sales and stock means closing stock.

(Ans: Closing stock Rs. 1,00,000; Debtors Rs. 2,50,000; Fixed assets Rs. 10,00,000; Cash in bank Rs. 2,50,000; Share capital Rs. 9,00,000; Reserves & Surplus Rs. 3,00,000; Current Liabilities Rs. 4,00,000; Balance sheet totals Rs. 16,00,000)

8.11 FURTHER READINGS

1. Gupta, S.P. : **Management Accounting**, Sahitya Bhavan Publications, Agra.
2. Sharma, R.K. & Shashi Gupta, K. : **Management Accounting**, Kalyani Publishers, Ludhiana.
3. Khan & Jain : **Management Accounting**, Tata McGraw Hill Publishing Co., New Delhi.
4. Jawaharlal : **Managerial Accounting**, Himalaya Publishing Co., New Delhi.
5. Manmohan & Goyal : **Principles of Management Accounting**, Sahitya Bhavan Publications, Agra.
6. Vinayakan, N. & Sinha, I.B. : **Management Accounting - Tools and Techniques**, Himalaya Publishing House, Mumbai.
7. Ravi M. Kishore : **Management Accounting**, Taxman Allied Services Pvt. Ltd., New Delhi.

8.12 KEY WORDS

- Turnover Ratio** : It judges how efficiently and effectively the firm uses its resources or the assets.
- Stock Turnover Ratio** : It establishes the relationship between cost of goods sold and average inventory held during a given period. It indicates the number of times the stock is turned into sales during an accounting period.
- Stock Velocity / Stock Conversion Period** : It indicates the time taken by the stock to get converted into sales. It can also be in terms of months and weeks.
- Debtors / Receivables Turnover Ratio** : It establishes the relationship between debtors and sales. This ratio is a measure of efficiency in collecting the debtors and tells how efficiently a company is enforcing its credit policy.

BLOCK - III : FINANCIAL STATEMENT ANALYSIS - II

This block describes the changes in financial position with the help of funds flow analysis and cash flow analysis. It includes two units i.e., 9 and 10.

Unit 9 deals with the preparation and analysis of funds flow statement based on working capital concept. Various sources and applications of funds are explained with suitable illustrations.

Unit 10 discusses the analysis of cash flow statement. It also explains the Accounting Standard - 3 issued by Institute of Chartered Accountants of India on Cash Flow Statements.

UNIT – 9 : FUNDS FLOW ANALYSIS

Aims and Objectives

This unit is devoted to explain the meaning of fund, funds flow statement and its preparation.

After studying this unit, you should be able to:

- explain the concept of fund;
- explain the meaning of Funds Flow statement;
- analyse significance of funds flow statement;
- differentiate between funds flow statement and Balance sheet;
- discuss the techniques of funds flow statement; and
- state the limitations of funds flow statements.

Structure

- 9.0 Introduction
- 9.1 The Concept of Fund
- 9.2 Flow of Fund
- 9.3 Meaning of Funds Flow Statement
- 9.4 Preparation of Funds Flow Statement
- 9.5 Funds from Operations
- 9.6 Sources and Uses of Funds
- 9.7 Managerial Uses
- 9.8 Distinction between Funds Flow Statement and Balance Sheet
- 9.9 Distinction between Funds Flow Statement and Profit and Loss Account
- 9.10 Some Important Points
- 9.11 Summary
- 9.12 Model Answers to Activities
- 9.13 Self Assessment Questions
- 9.14 Further Readings
- 9.15 Key Words

9.0 INTRODUCTION

The profit and loss account and the balance sheet are the two important financial statements of a business organization. The profit and loss account reports the revenues generated and expenses incurred during a particular period of time. The balance sheet contains information relating to assets and liabilities of an organization as on a particular date. Both the statements do not contain sufficient information to assess about the funds position of an organization by the users. In order to analyse the fund moments in a business organization, it is

Classification of Balance Sheet Items

i. Non-current Liabilities		i. Non-current Assets	
Equity share Capital	x x x	Land	x x x
Preference Share Capital	x x x	Building	x x x
Reserves and Surplus	x x x	Plant and Machinery	x x x
Debentures	x x x	Less: Depreciation	
Long-term loans	x x x	Furniture and Fittings	x x x
		Vehicles	x x x
ii. Current Liabilities		Patents	x x x
Trade Creditors	x x x	Investments (Long-term)	
Bank Overdraft	x x x	Trade Marks	x x x
Bills Payable	x x x	Goodwill	x x x
Provisions against		Preliminary Expenses	x x x
Current Liabilities	x x x	Profit and Loss Account	x x x
		(Debit balance)	
		ii. Current Assets	
		Inventories	x x x
		Trade Debtors	x x x
		Bills Receivables	x x x
		Cash and Bank Balances	x x x
		Loans and Advances	x x x
		Investments (Temporary)	x x x
Total	x x x x	Total	x x x x

The excess of current assets over current liabilities is called working capital. The excess of funds generated over funds outgo from current assets and current liabilities will lead to increase or decrease in working capital. If the current assets and current liabilities change in the same direction with same quantum only the totals of current assets and current liabilities change. Then, the difference between the two i.e., working capital, remains the same and hence there would be no flow of funds in such a situation. For example, when creditors or bills payable are paid in cash the total of current liabilities and current assets are reduced, but the difference between these two is not affected. Similarly, if bills receivable are collected neither the total of current assets nor the difference between current assets and current liabilities is affected. In these cases there is no flow of fund because working capital remains unchanged. The following are the transactions which do not cause any change in the working capital and therefore, do not cause any flow of fund.

- a) Transactions which involve replacement of one current liability with another current liability.

statement is a new contribution to accounting and over a period of time it has become an important tool of financial analysis and interpretation. It is a very useful tool in analysing the financial statements to disclose the changes that have taken place between two balance sheet dates.

Activity - 3

Why is funds flow statement prepared?

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.....
.....
.....

9.4 PREPARATION OF FUNDS FLOW STATEMENT

The preparation of funds flow statement is divided into two parts viz.

- a) Statement of Changes in Working Capital; and
- b) Statement of Sources and Uses of Funds.

a) Statement of Changes in Working Capital

The primary objective of this statement is to arrive at the net change in working capital between the dates of two balance sheets which should be shown in the funds flow statement. For this purpose a separate statement or schedule of working capital is to be prepared through which the net change in the working capital can be ascertained. The increase in working capital between the two balance sheet dates is treated as use of fund and the decrease in working capital is treated as sources of fund.

This statement or schedule is prepared in such a way that it indicates the amount of working capital at the end of two balance sheet dates as well as increase or decrease in the individual items of current assets and current liabilities. A part from this, it also discloses the effect of changes in the individual items of current assets and current liabilities on working capital. This statement finally discloses the difference in working capital at the end of two years either as an increase or decrease in working capital. While, ascertaining the increase or decrease in individual items of current assets and current liabilities and its impact on working capital the following rules are to be observed:

- a) Increase in the items of current assets will increase the working capital.
- b) Decrease in the items of current assets will decrease the working capital.
- c) Increase in the items of current liabilities will decrease the working capital.
- d) Decrease in the working of current liabilities will increase the working capital.

As such, we observe that there is a positive relationship between current assets and working capital. On other hand, there is an inverse relationship between changes in current liabilities and working capital.

the format of Statement of Sources and Application of Funds with the probable items of sources and uses of funds.

Proforma of Funds Flow Statement

Sources	Rs	Applications	Rs
Funds from Operations	x x x	Funds lost in operations	x x x
Issue of share Capital	x x x	Redemption of Preference	
Issue of Debentures	x x x	Share Capital	x x x
Raising long-term loans	x x x	Redemption of Debentures	x x x
Receipt from partly paid shares, called up	x x x	Repayment of long term loans	x x x
Sale of fixed assets	x x x	Purchase of fixed assets	x x x
Non-trading receipts such as dividend	x x x	Purchase of long-term investments	x x x
Sale of long term investments	x x x	Non-trading payments	x x x
Net decrease in working capital	x x x	Payment of dividend*	x x x
		Payment of tax*	x x x
Total	x x x x	Total	x x x x

* **Note:** These two items appear as an application of funds only when these items are treated as non-current liability.

9.5 FUNDS FROM OPERATIONS

The profit from operations gives rise to inflow of fund and loss from operations causes an outflow of fund. However, the amount of net profit disclosed by profit and loss account is not necessarily equal to inflow of fund. The reasons for this are, some of the items of expenses debited to the profit and loss account do not affect working capital because they are not incurred in cash. Similarly, some of the items of revenues credited to profit and loss account do not belong to operations of the firm. As such, the net profit disclosed by profit and loss account is to be adjusted in order to ascertain the real amount of funds available from operations for the purpose of funds flow statement. Depending upon the nature of information given either of the following two methods may be adopted for calculating profit from operations.

- 1) If the information regarding the net profit/loss is given separately, adjustments are to be made in the form of additions or deductions for non-cash items, exceptional and non-operating incomes and losses in the following manner.

Calculation of funds from operations

Closing balance of Profit and Loss Account or Retained Arnings (as given in the balance sheet)

Add: **Non fund and Non Operating items which have been already debited to Profit and Loss Account**

1. Depreciation and Depletion
2. Amortisation of fictitious and intangible assets such as ; Goodwill, patents, trade marks, preliminary expenses, discount on issue of shares, etc.

To Appropriation of retained earnings such as transfer to general reserve, dividend equalisation fund, sinking fund etc.	By Dividends received
To Loss on sale of any non current or fixed asset	By Profit on sale of Fixed or Non-current Assets
To Dividends (including interm dividend)	By Funds from Operations
To Proposed dividend (if not take as current liability)	(Balancing figure in case the debit side exceeds credit side)
To Provision for taxation (if not taken as current liability)	
To Closing balance of P&L Account	
To Funds Lost in Operations (balancing figure in case credit side exceeds debit side)	

Activity - 4

Explain the procedure of preparing the funds flow statement.

Illustration - 1

From the following Balance Sheet of Greater Co. Ltd., You are required to prepare a statement of changes in working capital and Statement of Flow of Funds.

Particulars	31-12-2002 Rs.	31-12-2003 Rs.
Assets		
Land and Buildings	50,000	50,000
Plant	24,000	34,000
Stock	9,000	7,000
Debtors	16,500	19,500
Cash at Bank	4,000	9,000
	1,03,500	1,19,500
Capital and Liabilities		
Capital	80,000	85,000
Profit and Loss Appropriation Account	14,500	24,500
Creditors	9,000	5,000
Mortgage	--	5,000
	1,03,500	1,19,500

Balance Sheet of MAXWELL Ltd.

Liabilities	2002	2003	Assets	2002	2003
	Rs.	Rs.		Rs.	Rs.
Share Capital	2,00,000	2,40,000	Fixed Assets	3,60,000	4,10,000
General Reserve	1,00,000	1,20,000	Investments	40,000	50,000
Profit & Loss account	20,000	30,000	Stock in trade	1,00,000	1,40,000
16% Debentures	1,00,000	90,000	Debtors	80,000	98,000
Sundry Creditors	1,80,000	2,20,000	Cash	3,000	2,000
Proposed Dividend	20,000	30,000	Preliminary Expenses	37,000	30,000
	6,20,000	7,30,000		6,20,000	7,30,000

During the year ended 30-6-2003, depreciation charged on fixed assets amounted to Rs.50,000. The final dividend for the year ended 30-6-2002 amounting to Rs. 20,000 was paid on 10-2-2003.

Solution

Statement of Changes in Working Capital

Particulars	2002	2003	Change in working capital	
			Increase	Decrease
	Rs.	Rs.	Rs.	Rs.
Current Assets				
Stock in Trade	1,00,000	1,40,000	40,000	--
Debtors	80,000	98,000	18,000	--
Cash	3,000	2,000	--	1,000
Total of Current Assets	1,83,000	2,40,000		
Current Liabilities				
Creditors	1,80,000	2,20,000		
Total of Current Liabilities	1,80,000	2,20,000		
Working Capital	3,000	20,000		
Increase in Working Capital	17,000			17,000
	20,000	20,000	58,000	58,000

Funds Flow Statement

Sources	Rs.	Applications	Rs.
Funds from Operations	1,17,000	Purchase of Fixed Assets	1,00,000
Share Capital	30,000	Purchase Investments	10,000
		Dividends Paid	20,000

Bank Loan 35,000	--	Debtors 40,000	32,100
Creditors 75,000	67,600	Cash 250	300
Provision for Taxation 15,000	17,500	Bank 4,000	--
		Goodwill 2,500	--
	2,65,250	2,55,000	2,65,250
			2,55,000

The following information is also provided:

Dividend paid during 2003 Rs. 11,500, depreciation written off on Plant Rs. 7,000 and Income Tax provision made during the year Rs. 16,500.

9.6 SOURCES AND USES OF FUNDS

The main sources and uses of funds in a business concern are explained below:

Sources of Funds

The funds flow into the organization from the following sources:

- i) **Funds generated from operations:** During the course of business activity a company generates revenue mainly in the form of sale proceeds and paid out for costs. The difference between these two items will be the amount of funds generated by trading operations. The funds generated from business operations are calculated after making certain adjustments as explained earlier.
- ii) **Funds raised from shares, debentures, long-term loans:** The long term funds are raised by the business organizations during the year by issue of new shares or debentures and by raising long term loans. If any premium is collected, it is also forms part of funds raised.
- iii) **Sales of fixed assets and long term investments:** Any amount generated from sale of fixed assets or long term investments is a source of funds. While preparing funds flow statement the gross sale proceeds are to be taken as source of funds. Any profit or loss arising from such sale is adjusted in the funds generated from operations.

Application of Funds

The use of funds in an organization takes place in the following forms:

- i) **Repayment of preference capital or debentures or long term loans:** The funds of an organization may be used for redumption of preference shares or debentures, repayment of long term loans of the organizations.
- ii) **Purchase of fixed assets and long term investments:** The funds of an organization may also be used to purchase long term assets which usually constitute significant application of funds. This normally includes purchase of land, buildings, plant and machinery, furniture and fittings, vehicles and long-term investments.

9.8 DISTINCTION BETWEEN FUNDS FLOW STATEMENT AND BALANCE SHEET

Funds flow statement and Balance Sheet are different types of financial statements. Funds flow statement is not a substitute of Balance sheet. The following are the differences between these two:

- i) Balance sheet is a static document because it is prepared at the end of accounting period and portrays the fair financial position of a firm as on a given date. Funds flow statement is dynamic in nature because it shows a change in working capital between the dates of two balance sheets.
- ii) Balance sheet includes the balances of real and personal accounts and depicts the total resources of a firm. Whereas, the funds flow statement incorporates items causing changes in working capital.
- iii) Balance sheet reveals the financial position of a firm and on that basis the financial soundness of a firm is decided. Funds flow statement on the other hand is a management tool and which is used to study the changes in inflows and out flows, financial position, financial activities, etc.
- iv) Balance sheet is normally, used by the external parties where as funds flow statement is basically used by internal management.
- v) Balance sheet is the end product of all accounting operations of a particular time. But the funds flow statement is a post balance sheet exercise.
- vi) The balance sheet is prepared to highlight upon, different resources of the firm. Whereas the funds flow statement is prepared to indicate the changes in the resources during a short period.

9.9 DISTINCTION BETWEEN FUNDS FLOW STATEMENT AND PROFIT AND LOSS ACCOUNT

- i) Profit and Loss account determines the amount of profit earned by a firm and discloses sources of such profits or losses. Whereas, the funds flow statement reveals different sources of funds and their applications in different forms of assets.
- ii) Profit and Loss account reports the results of business activities and indicate the reasons for profitability or otherwise. Whereas, funds flow statement deals with financial resources needed for running the business activities.
- iii) The Profit and loss account does not disclose accurately the funds available from operations because of inclusion of non-cash items in it. The funds flow statement discloses accurately the funds available from operations. Apart from other sources sale proceeds from fixed assets, issue of shares, debentures etc., are also included in the funds from statement.
- iv) The profit and loss account does not highlight the changes that have taken place in the financial position of a firm. Whereas the funds flow statement indicates financial position and movement of funds.
- v) The funds flow statement is prepared based on the financial statements of two consecutive years. Whereas the profit and loss account is prepared on the basis of

information it is fair to assume proposed dividend as non-current liability and hence it should not be shown in the statement of changes in working capital. However, it is very important in respect of proposed dividend. i.e., the amount of proposed dividend of last year shown in the balance sheet should be assumed that it has been paid in the current year, and thus, should be shown in the of funds flow statement. If it is assumed as current liability, it is shown only in the statement of changes in working capital and the payment of proposed dividend is not treated as an application of fund.

Illustration - 3

Calculate funds from operations with the help of the following Profit and Loss Account of a firm.

	Rs.		Rs.
To Expenses paid and, Outstanding	1,50,000	By Gross Profit	2,25,000
To Depreciation	35,000	By Gain of sale of land	30,000
To Loss on sale of machinery	2,000		
To Discount	100		
To Goodwill written off	10,000		
To Net Profit	57,900		
	<u>2,55,000</u>		<u>2,55,000</u>

Solution

Calculation of Funds From Operations

		Rs.
Net Profit (as given)		57,900
Add: Non-fund and non-operating items which have been debited to P&L Account		
Depreciation	35,000	
Loss on sales of machines	2,000	
Goodwill written off	10,000	47,000
		<u>1,04,900</u>
Less: Non-fund and non-operating items which have been credited to P&L Account		
Gain on sale of land		30,000
Funds from Operations		<u>74,900</u>

Illustration - 5

From the following Balance Sheets of Jain enterprises Ltd. you are required to prepare a Statement of Changes in Working Capital.

	31-12-2002 Rs.	31-12-2003 Rs.
Sundry Creditors	60,000	70,000
Sundry Debtors	1,20,000	1,40,000
Bills Receivable	8,000	6,000
Bills payable	5,000	3,000
Prepaid Expenses	500	1,000
Outstanding Expenses	2,000	1,500
Stock	1,60,000	1,50,000
Investment in Govt. Securities	--	20,000

Solution

Statement of Changes in Working Capital

Items	2002 Rs.	2003 Rs.	Change in working capital	
			Increase Rs.	Decrease Rs.
Current Assets				
Sundry debtors	1,20,000	1,40,000	20,000	--
Bills receivable	8,000	6,000	--	2,000
Prepaid expenses	500	1,000	500	--
Stock	1,60,000	1,50,000	--	10,000
Investments	--	20,000	20,000	--
Total	2,88,500	3,17,000		
Current Liabilities				
Sundry creditors	60,000	70,000	--	10,000
Bills payable	5,000	3,000	2,000	--
Outstanding expenses	2,000	1,500	500	--
Total	67,000	74,500		
Working Capital (CA - CL)	2,21,500	2,42,500		
Net Increase in Working Capital	21,000		--	21,000
Total	2,42,500	2,42,500	43,000	43,000

Additional Information

- During the year ended 31st Dec, 2003 a dividend of Rs. 84,000 was paid.
- Assets of another company were purchased for a consideration of Rs. 1,00,000 payable by issue of shares. The assets included Land and Buildings of Rs. 50,000 and stock of Rs. 50,000.
- Depreciation written off on machinery is Rs. 24,000 and on Land and Buildings is Rs. 45,000.
- Income Tax paid during the year was Rs. 70,000.
- Additions to Buildings were for Rs. 75,000.

Solution

Statement showing changes in working capital

Particulars	2002 Rs.	2003 Rs.	Change in working capital	
			Increase Rs.	Decrease Rs.
Current Assets				
Cash at Bank	1,04,000	18,000	--	86,000
Debtors	1,60,000	1,28,000	--	32,000
Stock	2,00,000	2,52,000	52,000	--
Total	4,64,000	3,98,000		
Current Liabilities				
Creditors	3,00,000	2,60,000	40,000	--
Total	3,00,000	2,60,000		
Working Capital (CA - CL)	1,64,000	1,38,000		
Net decrease in Working Capital	--	26,000	26,000	--
	1,64,000	1,64,000	1,18,000	1,18,000

Funds Flow Statement

Sources	Rs.	Applications	Rs.
Issue of Shares	50,000	Purchase of L&B	75,000
Sale of Machinery	76,000	Bank Loan paid	2,40,000
Funds from Operations	3,17,000	Dividend paid	84,000
Decrease in Working Capital	26,000	Income Tax paid	70,000
	4,69,000		4,69,000

9.11 SUMMARY

In this unit the concept of funds flow statement has been explained. The statement of changes in financial position of a firm is analyzed by preparing two statements viz., (i) statement of changes in working capital and (ii) funds flow statement. The procedure involved in the preparation of these two statements is well discussed. The uses of this statement have also been explained apart from explaining the distinction between funds flow statement and the other basic financial statements.

9.12 MODEL ANSWERS TO ACTIVITIES

1. The word fund has been defined in different senses i.e., capital fund, cash fund, liquid fund and working capital, etc. However, the most acceptable meaning of fund with reference to funds flow statement is "Working Capital" only not cash or capital. Working capital is the excess of current assets over current liabilities. Hence, the difference between current assets and current liabilities is called fund. In other words, fund is equal to current assets less current liabilities.
2. The flow of funds refers to movement of funds which cause a change in working capital of an organization. To understand, the concept of flow of funds we have to first of all identify the difference between current and non-current assets. For the preparation of funds flow statement all items of a balance sheet are to be classified into the following categories:

The following transactions do not cause any flow of fund:

Transactions which involve replacement of one current liability with another current liability. Transactions which represent conversion of one current asset into another current asset. Transactions which increase / decrease current assets causing a corresponding increase/ decrease in current liabilities by the same amount. Transactions which involve non-current items.

The following transactions cause the flow of fund:

Transactions between current assets & fixed assets. Transactions between current assets and capital and long – term liabilities. Transactions between current liabilities and fixed assets. Transactions between current liabilities and capital and long term liabilities. Flow of fund takes place when a business transactions brings a change in the working capital. Such a change may be positive (increase) or negative (decrease). These directions in change or called as 'Fund Elements' or 'Fund Factors' or 'Inflows' and 'Outflows'. Inflows denotes to the sources and outflow denotes to the use of fund.

3. Statement of Sources and uses of Funds depicts the sources from which funds are obtained and the uses to which they are being put. Funds flow statement is such a statement prepared in a summary form, which discloses the changes in financial items of balance sheet prepared at two different dates. A Statement of sources and application of fund is a technical device designed to analyse the changes in the financial conditions of a business enterprise between two dates.
4. The funds flow statement is divided into two parts viz. Statement of changes in Working Capital and Statement of Sources and Uses of Funds. The primary objective of preparing the statement of changes in working capital is to arrive the net change in working capital

Funds Flow Statement

Sources	Rs.	Applications	Rs.
Funds from Operations	40,500	Purchase of Plant	16,500
Share Capital	25,000	Dividend paid	11,500
Sale of Land	5,000	Tax paid	14,000
Decrease in Working Capital	9,450	Goodwill paid	2,500
		Repayment of Bank Loan	35,000
	79,500		79,500

Funds From Operations

Particulars	Rs.
Current Year Profit (15,300 - 15,200)	50
Profit Transferred to General Reserve	5,000
Add: Depreciation	7,000
Dividend Paid	11,500
Income-Tax Provisions	16,500
Funds from Operations	40,050

Plant Account

Particulars	Rs.	Particulars	Rs.
To Balance	75,000	By Depreciation	7,000
To Bank	16,500	By Balance	84,500
	91,500		91,500

Provision for Tax Account

Particulars	Rs.	Particulars	Rs.
To Balance	17,500	By Balance	15,000
To Bank	14,000	By Provision	16,500
	31,500		31,500

6. The profit from operation gives raise to inflow of fund and loss from operations cause an outflow of fund. However, the amount of net profit disclosed by profit and loss account is not necessarily equal to inflow of fund. The reasons for this are, some of the items of expenses debited to the profit and loss account do not effect working capital because there are not incurred in cash. Similarly, some of the items of revenues credited to profit and loss account do not belong to operations of the firm. As such, the net profit disclosed by profit and loss account is to be adjusted in order to ascertain the real amount of funds available from operations for the purpose of funds flow statement. Depending upon the nature of information given either of the following two methods may be adopted for calculating profit from operations.

Depreciation:			
On Buildings		5,000	
On Plant		7,500	45,000
			60,300
Less: Balance of P&L Account (2002)			15,250
Funds from Operations			45,050

Share Capital Account

	Rs.		Rs.
To Balance c/d.	1,25,000	By Balance b/d.	1,00,000
		By Bank Account	25,000
	<u>1,25,000</u>		<u>1,25,000</u>

General Reserve Account

	Rs.		Rs.
To Balance c/d.	30,000	By Balance b/d.	25,000
		By P&L Account	5,000
	<u>30,000</u>		<u>30,000</u>

Provision for Taxation Account

	Rs.		Rs.
To Bank Account	14,000	By Balance b/d.	15,000
To Balance c/d.	17,500	By P&L Account	16,500
	<u>31,500</u>		<u>31,500</u>

Bank Loan Account

	Rs.		Rs.
To Balance c/d.	67,600	By Balance b/d.	35,000
		By Bank Account	32,600
	<u>67,600</u>		<u>67,600</u>

Land & Building Account

	Rs.		Rs.
To Balance c/d.	1,00,000	By Depreciation Account (P&L Account)	5,000
		By Balance c/d.	95,000
	<u>1,00,000</u>		<u>1,00,000</u>

EXERCISES

1. From the following particulars prepare a Statement of Changes in working Capital and Funds Flow Statement.

Items	2003 Rs.	2002 Rs.
Assets		
Cash	9,000	15,000
Debtors	27,000	25,000
Stock	40,000	35,000
Investments	--	5,000
Fixed Assets	73,000	44,750
Goodwill	--	5,000
Total	1,49,000	1,29,750
Liabilities		
Trade Creditors	29,000	31,000
Short-term Liabilities	15,000	16,500
Accrued Expenses	8,000	7,500
Mortgagee	15,000	10,000
Share Capital	65,000	50,000
Retained Earnings	17,000	14,750
Total	1,49,000	1,29,750

Depreciation provided during the year 2003 amounted to Rs.1,750 and Goodwill was written off out of retained profits. Dividend paid during the year 2003 amounted to Rs.3,500.

[Ans: Decrease in working Capital Rs.4,000; Funds from operations Rs. 12,500; Total of FFS Rs. 37,500]

Note: Investments are treated as Long term investments.

2. From the following summarized financial statements of Taxman Ltd. as on 31st December, 2002 and 31st December 2003, you are required to Prepare (a) Statement of changes in Working Capital during the year 2003 and (b) A statement showing sources and application of funds during the same period.

Capital and Liability	31.12.2002 Rs.	31.12.2003 Rs.	Assets	31.12.2002 Rs.	31.12.2003 Rs.
Equity Share Capital	5,00,000	6,00,000	Freehold Land and		
Share Premium	--	20,000	Building at Cost	3,00,000	3,00,000
Revenue Reserve	80,000	1,20,000	Plant and Machinery		
Profit & Loss Account	1,20,000	1,60,000	at Cost	6,00,000	6,80,000

4. Following are the summarized balance sheets of Devi Pharma Ltd: As on 31st December, 2002 and 2003.

Balance Sheet

Liabilities	2002 Rs.	2003 Rs.	Assets	2002 Rs.	2003 Rs.
Creditors	39,500	41,135	Cash at Bank	2,500	2,700
Bills Payable	33,780	11,525	Debtors	87,490	73,360
Bank OD	59,510	--	Stock	1,11,040	97,370
Provision for Taxation	40,000	50,000	Land and Buildings	1,48,500	1,44,250
Reserves	50,000	50,000	Plant and Machinery	1,12,950	1,16,200
P&L Account	39,690	41,220	Goodwill	--	20,000
Share Capital	2,00,000	2,60,000			
	<u>4,62,480</u>	<u>4,53,880</u>		<u>4,62,480</u>	<u>4,53,880</u>

Additional Information

- During the year 2003, an interim dividend of Rs. 26,000 was paid.
- The assets of another company were purchased for Rs. 60,000 payable in fully paid shares of the company. These assets consisted of stock Rs. 22,000; machinery - Rs. 18,000; and goodwill - Rs.20,000
- Sundry purchases of plant were made totaling Rs. 5,600.
- Income tax paid during 2003 amounted to Rs. 25,000.
- The net profit for 2003 before tax was Rs. 62,530.

You are required prepare a funds flow statement for the year 2003 and a schedule of changes in working capital.

[Ans: Funds from Operations Rs.52,130

Increase in Working capitalRs.42,530.]

5. The following balance Sheets of Mayuri Products Ltd, for the years 2002 and 2003 are available. You are required to Prepare a funds flow statement.

Balance Sheet

Liabilities	2002 Rs.	2003 Rs.	Assets	2002 Rs.	2003 Rs.
Share Capital	6,00,000	7,00,000	Fixed Assets	10,00,000	12,00,000
General Reserve	2,00,000	2,50,000	Less: Accumulated depreciation	2,00,000	2,50,000
				<u>8,00,000</u>	<u>9,50,000</u>

Additional Information

- i) Fixed assets costing Rs.1,20,000 were purchased for cash.
- ii) Fixed assets (original cost Rs. 40,000 accumulated depreciation Rs.15,000 were sold at bank.
- iii) Depreciation for the year 2003 amounted to Rs.55,000 and duly debited to P&L A/c.
- iv) Dividends paid amounted to Rs. 30,000 in 2003.

[Ans: Increase in working capital Rs. 46,100

Funds from operations Rs. 44,100.]

7. From the Following particulars of Atlantic Business Corporation prepare a funds flow statement.

Balance Sheet as on 1-4-2003 and 31-3-2004

	1.4.2003 Rs.	31.3.2004 Rs.
Cash and bank	40,000	44,400
Accounts Receivable	10,000	20,700
Inventory	15,000	15,000
Land	4,000	4,000
Business Premises	20,000	16,000
Plant and equipment	15,000	17,000
Accumulated Depreciation	(5,000)	(2,800)
Patents and trademarks	1,000	900
Total Assets	1,00,000	1,15,200
Current Liabilities	30,000	32,000
Bonds payable	22,000	22,000
Bonds payable discount	(2,000)	(1,800)
Capital	35,000	43,500
Retained earnings	15,000	19,500
Total Liabilities	1,00,000	1,15,200

Additional Information

- i) Income for the period is Rs.10,000.
- ii) A Building that costed Rs.4,000, and had a book value of Rs,1,000, was sold for Rs.1,400.

UNIT –10 CASH FLOW ANALYSIS

Aims and Objectives

The Purpose of this unit is to explain the preparation of Cash Flow Statement.

After studying this unit, you should be able to:

- explain the meaning of cash flow statement;
- discuss the items of cash inflows and outflows;
- prepare cash flow statement;
- differentiate between cash flow statement and funds flow statement; and
- state the limitations of cash flow statements.

Structure

10.0 Introduction

10.1 Meaning of Cash Flow Statement

10.2 Preparation of Cash Flow Statement

10.3 Uses of Cash Flow Statement

10.4 Limitations of Cash Flow Analysis

10.5 Differences between Cash Flow Statement and Funds Flow Statement

10.6 Summary

10.7 Model Answers to Activities

10.8 Self Assessment Questions

10.9 Further Readings

10.10 Key Words

10.0 INTRODUCTION

In Unit 9 the preparation of funds flow statement has been discussed on the basis of the concept working capital. This statement is of immense use for long range financial planning. The funds flow statement which is prepared on the basis of working capital does not reveal every aspect of financing. The working capital concept may conceal much information by way of exclusion of many important items, making the whole financing technique as a inconsistent one. Under these circumstances it is of paramount importance to prepare a statement projecting the detailed profile of changes in cash. It is imperative on the part of management to have a clear idea of cash movement for ensuring efficient running of the firm. The movements of cash can be easily ascertained from the cash flow statement based on the information collected from operational activities. It discloses when the firm runs short of cash or vice-versa and the events that contribute to the inflow and out flow of cash.

Calculation of Cash from Operations (Traditional Method)

	Rs.	Rs.
Funds from operations		x x x
Add: Increase in Current Liabilities (excluding Bank Overdraft)	x x x	
Decrease in Current Assets (excluding cash and bank balances)	x x x	x x x
		x x x
Less: Increase in Current Assets (excluding cash and bank balances)	x x x	
Decrease in Current Liabilities (excluding bank overdraft)	x x x	x x x
Cash From Operations		x x x

B) Cash Flows from Investing Activities

Investing activities include acquisition and disposal of long term assets and other investments which are not included in cash equivalents. Investing activities include transactions that involve the purchase and sale of long-term assets such as land and buildings, plant and machinery etc., which are not held for re-sale and other investment purpose. Following are the items of cash flows arising from investing activities:

- i) Cash payments to acquire fixed assets (including intangibles)

These payments include those relating to capitalized research and development costs and self-constructed fixed assets.
- ii) Cash receipts from disposal of fixed assets (including intangibles)
- iii) Cash payments to acquire shares, warrants, or debt instruments of other enterprises and interest in joint ventures (other than payments for those instruments considered to be cash equivalents and those held for dealing or trading purposes)
- iv) Cash receipts from disposal of shares, warrants or debt instruments of other enterprises and interest in joint ventures (other than receipts from those instruments considered to be cash equivalents and those held for dealing or trading purposes)
- v) Cash advances and loans made to third parties (other than advances and loans made by a financial enterprise)
- vi) Cash receipts from the repayment of advances and loans made to third parties (other than advances and loans of a financial enterprise)
- vii) Cash receipts and payments relating to future contracts, forward contracts, option contracts, and swap contracts except when the contracts are held for dealing or trading purposes.

C) Cash Flows from Financing Activities

Financing activities are those activities that result in changes in the sizes and composition of owners capital and borrowings of a firm. Followings are the items of cash flows arising from financing activities:

- i) Cash proceeds from issuing of shares

in amount arise due to changes in exchange rate, should not be included in operating, investing and financing activities. This shall be shown separately in the reconciliation statement.

Extraordinary Items

Any cash flows relating to extraordinary items should as far as possible classify them into operating investing or financing activities and those items should be separately disclosed in the cash flow statement. Some of the examples for extraordinary items is bad debts recovered, claims from insurance companies, winning of a law suit or lottery etc. The above disclosure is in addition to the disclosure mentioned in AS-5, 'Net Profit or Loss for the Period, Prior Period Items and Changes in Accounting Policies'.

Interest and Dividends

- Cash flows from interest and dividends received and paid should be disclosed separately.
- The treatment of interest and dividends, received and paid, depends upon the nature of the enterprise i.e., financial enterprise and other enterprises.
- In case of financial enterprises, cash flows arising from interest paid and interest and dividends received should be classified as cash flows from operating activities.
- In case of other enterprises:
 - Cash outflows arising from interest paid on term loans and debentures should be classified as cash outflow from financing activities.
 - Cash outflows arising from interest paid on working capital loan should be classified as cash outflow from operating activities.
 - Interest and dividends received should be classified as cash inflow from investing activities.
 - Dividend paid on equity and preference share capital should be classified as cash outflow from financing activities.

Taxes on Income

- Cash flows arising from taxes on income should be separately disclosed.
- It should be classified as cash flow from operating activities unless they can be specifically identified with financing and investing activities.
- When tax cash flows are allocated over more than one class of activity, the total amount of taxes paid is disclosed.

Investments in Subsidiaries, Associates and Joint Ventures

- Any such investments should be reported in the cash flow statement as investing activity.
- Any dividends received should also be reported as cash flow from investing activity.

Acquisition and disposals of subsidiaries and other business units

The aggregate cash flows arising from acquisitions and from disposals of subsidiaries or other business units should be presented separately and classified as investing activities.

will not indicate the net cash provided by or net loss will not indicate the net cash used in operating activities. In order to calculate the net cash flows from operating activities, it is necessary to replace revenues and expenses with actual receipts and payments in cash. This is done by eliminating the non-cash revenues and/non-cash expenses from the given earned revenues and incurred expenses. There are two methods of converting net profit into net cash flows from operating activities viz., (i) Direct method, and (ii) Indirect method.

Direct Method

Under direct method, cash receipts from operating revenues and cash payments for operating expenses are arranged and presented in the cash flow statement. The difference between cash receipts and cash payments is the net cash flow from operating activities. In this case, each cash transaction is analyzed separately and the total cash receipts and payments for the period are determined. The summarized data for revenues and expenses can be obtained from the financial statements and additional information. We may convert accrual basis of revenue and expenses to equivalent cash receipts and payments. Make sure that a uniform procedure is adopted for converting accrual base items to cash base items. Under direct method, items like depreciation, amortization of intangible assets, preliminary expenses, debenture discount, etc., are ignored from cash flow statement since the direct method includes only cash transactions and non-cash items are omitted. Likewise, no adjustment is made for loss or gain on the sale of fixed assets and investments.

Indirect method

In this method the net profit (loss) is used as the base and is converted it to net cash provided by or used in operating activities. The indirect method adjusts net profit for items that affect the net profit but do not affect cash. Non-cash and non-operating charges in the Profit and Loss Account are added back to the net profit while non-cash and non-operating credits are deducted to calculate operating profit before working capital changes. It is partial conversion of accrual basis profit to cash basis profit. Necessary adjustments are made for increase or decrease in current assets and current liabilities to obtain net cash from operating activities.

Other Disclosure requirements

- If any significant cash and cash equivalent balances held by the enterprises are not available for use by it, it should be disclosed in the cash flow statement. For example, cash held by the overseas branch, which is not available for use by the enterprise due to exchange control regulations or due to other legal restrictions.
- Any additional information to understand the financial position and liquidity position of an enterprise should be disclosed. For example:
 - The amount of undrawn borrowing facilities that may be available for future operating activities and to settlement of capital commitments, indicating any restrictions on the use of these facilities; and
 - The aggregate amount of cash flows that represent increases in operating capacity separately from those cash flows that are required to maintain operating capacity.
- A reconciliation of cash and cash equivalents given in its cash flow statement with equivalent items reported in the Balance Sheet.
- An enterprise should disclose the policy which it adopts in determining the composition of cash and cash equivalents.
- The effect of any change in the policy for determining components of cash and cash equivalents should be reported in accordance with AS-5, 'Net Profit or Loss for the period, Prior period items, and changes in accounting policies'.

- Foreign Exchange	xxx	
- Investments	xxx	
- Gain or loss on sale of fixed assets	(xxx)	
- Interest/dividend	xxx	
Operating profit before working capital changes	xxx	
Adjustments for:		
- Trade and other receivables	xxx	
- Inventories	(xxx)	
- Trade payable	xxx	
Cash generation from operations	xxx	
- Interest paid	xxx	
- Direct Taxes	(xxx)	
Cash before extraordinary items	x x x	
Deferred revenue	x x x	
Net cash from Operating Activities		xxxx
Cash Flow from Investing Activities		
Purchase of fixed assets	(xxx)	
Sale of fixed assets	xxx	
Sale of investments	xxx	
Purchase of investments	(xxx)	
Interest received	xxx	
Dividend received	xxx	
Loans to subsidiaries	xxx	
Net cash from Investing Activities		xxxx
Cash Flow from Financing Activities		
Proceeds from issue of share capital	xxx	
Proceeds from long term borrowings	xxx	
Repayments to finance/lease liabilities	xxx	
Dividend paid	xxx	
Net cash from Financing Activities		xxxx
Net increase(decrease) in Cash and Cash Equivalents		xxxx
Cash and Cash Equivalents at the beginning of the year		xxxx
Cash and Cash Equivalents at the end of the year		xxxx

Activity - 3

From the following balances, you are required to calculate cash from operations.

	December, 31	
	2002 Rs.	2003 Rs.
Debtors	50,000	47,000
Bills Receivable	10,000	12,500
Creditors	20,000	25,000
Bills Payable	8,000	6,000
Outstanding Expenses	1,000	1,200
Prepaid Expenses	800	700
Accrued Income	600	750
Income Received in Advance	300	250
Profit made during the year	-	1,30,000

Illustration - 2

X Ltd. had the following summarized Balance Sheet and Profit and Loss Account relating to the year 2003.

Balance Sheet
as at 31st December, 2003

Liabilities	Rs	Assets	Rs.
Share Capital:		Fixed Assets:	
Fully paid shares of Rs.100 each	4,00,000	Cost	10,00,000
General Reserve	1,00,000	Depreciation	
8% Debentures	2,50,000	written off	3,50,000
P&L Account	35,000	Current Assets:	
Creditors:		Stock in trade	1,50,000
For goods	2,65,000	Book Debts	2,00,000
For expenses (manufacturing)	20,000	Cash at Bank	40,000
		Preliminary Expenses	30,000
	<u>10,70,000</u>		<u>10,70,000</u>

Solution**Cash Flow Statement
(Traditional Method)**

Bank Balance as on 1-1-2003 (Overdraft, balancing figure)		(3,70,000)
Add: Sources		
Issue of Debentures		2,50,000
Cash from Operations		3,40,000
Sale of Investments		85,000
		<u>3,05,000</u>
Less: Applications		
Fixed assets purchased	2,00,000	
Dividends paid	65,000	2,65,000
Balance at Bank as on 31 st December, 2003		40,000
		<u>3,05,000</u>

Working Notes

Funds from operations		
Net Profit as per Profit and Loss A/c.		1,10,000
Add: Preliminary Expenses written off		5,000
Depreciation		90,000
		<u>2,05,000</u>
Less: Profit on sale on investments		15,000
Funds from operations		<u>1,90,000</u>

Cash from Operations		
Funds from Operations	1,90,000	
Add: Increase in creditors for goods	65,000	
Increase in creditors for expenses		5,000
Decrease in stock		30,000
Decrease in Book debts		50,000
Cash from Operations		<u>3,40,000</u>

- ii) The cash flow analysis helps the management in exploring possibility of repayments of long-term debts. The cash flow statement discloses the increase or decrease in cash and reasons thereof.
- iii) A comparison between actual and budget cash flow statement discloses the failure or success of the management in managing cash resources and necessary remedial measures to be taken in case of deviation.
- iv) Projected cash flow statement helps the management to determine the estimate the likely inflows and outflows of cash operations and the amount of cash to be raised from other sources for the future needs of the firm.
- v) Cash flow analysis supplements the analysis provided by funds flow statement.

10.4 LIMITATIONS OF CASH FLOW ANALYSIS

Cash flow statement does not measure the efficiency of one firm with that of another. Usually a firm with heavy investment will have more cash inflows, therefore inter industry comparison of cash flow statement may be misleading.

On the basis of increase in cash flows of a firm in the current year over the previous year. It may not be better of over the previous year. Thus, the comparison over the period of time can be misleading.

The terms of purchases and sales will differ from firm to firm. Moreover cash inflow does not mean profit. Therefore inter-firm comparison of cash flows may also be misleading.

The balance of cash as disclosed by the cash flow statement may not represent the real liquid position of the firm. The cash position is influenced by purchase and sales policies and by making certain advance payments or by postponing certain payments.

Cash flow statement cannot be equated with income statement. An income statement takes into account both cash as well as non-cash items. As such net cash flows does not necessarily mean net income of the firm.

Cash flow statement is only a supplementary to funds flow statement and cannot be a substitute to income statement or funds flow statement.

In spite of these limitations cash flow statement is very useful for financial analysis. It discloses the volume and speed at which cash flows in various segments of the firm and amount of the capital tide up in a particular segment.

10.5 DIFFERENCES BETWEEN FUNDS FLOW STATEMENT AND CASH STATEMENT

The cash flow statement differs from funds flow statement in the following respects:

- i) Funds flow statement is prepared on the basis of working capital concept of funds. Whereas in case of cash flow statement no classification of current and non-current items is taken into account. It is based on cash concept of fund.
- ii) Funds flow statement summarizes the financial changes that have taken place between two dates of the balance sheets in terms of sources and application of funds as well as net increase or decrease in working capital. Cash flow statement shows the changes in

Less : Increase in Bills Receivable	5,000	
Increase in stock	7,000	
Decrease in Bills Payable	5,000	17,000
		<u>58,000</u>

Illustration - 4

From the following balances you are required to calculate cash from operations :

Particulars	Dec. 31 st 2002	Dec. 31 st 2003
Debtors	50,000	47,000
Bills Receivables	10,000	12,500
Creditors	20,000	25,000
Bills Payable	8,000	6,000
Outstanding Expenses	1,000	1,200
Prepaid Expenses	800	700
Accrued Income	600	750
Income Received in Advance	300	250
Profit made during the year	-	1,30,000

Solution

Calculation of Cash from Operations

Profit made during the year		1,30,000
Add : Decrease in debtors		3,000
Increase in Creditors		5,000
Increase in Outstanding Expenses		200
Decrease in prepaid Expenses		100
		<u>1,38,300</u>
Less : Increase in Bills Receivable	2,500	
Increase in Accrued income	150	
Decrease in Bills Payable	2,000	
Decrease in Income received in advance	50	4,700
		<u>1,33,600</u>

Illustration - 6

From the following Balance Sheet and Profit and Loss Account you are required to prepare a Cash Flow Statement of ABC Ltd.

Balance Sheet

Liabilities	2002		2003	
	2002	2003	2002	2003
Share Capital	70,000	70,000	Plant Machinery	50,000
Secured Loans (Repayable 2003)	-	40,000	Inventory	15,000
Creditors	14,000	39,000	Debtors	5,000
Tax Payable	1,000	3,000	Cash	20,000
P & L A/c.	7,000	10,000	Prepaid Expenses	2,000
	92,000	1,62,000		92,000
				1,62,000

Profit & Loss A/c. for the year ended 31st December, 2003

Particulars	Rs.	Particulars	Rs.
To Opening Inventory	15,000	By Sales	1,00,000
To purchases	98,000	By Closing inventory	40,000
To Gross Profit c/d.	27,000		
	1,40,000		1,40,000
To General Expenses	11,000	By Gross Profit b/d.	27,000
To Depreciation	8,000		
To Taxes	4,000		
To Net Profit c/d.	4,000		
	27,000		27,000
To Dividend	1,000	By balance b/d.	7,000
To Balance c/d.	10,000	By Net Profit b/d.	4,000
	11,000		11,000

Solution

Funds from Operations

Net Profit	4,000
Add: Depreciation	8,000
Taxes	4,000
Funds from Operation	16,000

Illustration - 7

Balance sheets of X and Y on 1-1-2003 and 31-12-2003 were as follows:

Balance Sheet

Liabilities	1.1.03	31.12.03	Assets	1.1.03	31.12.03
	Rs.	Rs.		Rs.	Rs.
Creditors	40,000	44,000	Cash	10,000	7,000
Mrs.'s Loan	25,000	-	Debtors	30,000	50,000
Loan from 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
	2,30,000	2,47,000		2,30,000	2,47,000

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 1.1.2003 was Rs. 25,000 and 31.12.2003 Rs. 40,000. Net profit for the year 2003 amounted to Rs. 45,000. You are required to prepare Cash Flow Statement.

Solution

**Cash Flow Statement
(Traditional Method)**

	Rs.	Rs.
Cash Balance as on 1-1-2003		10,000
Add: Source		
Cash from Operations	59,000	
Loan from Bank	10,000	
Sale of Machinery	5,000	74,000
		84,000
Less: Applications		
Purchase of Land	10,000	
Purchase of Building	25,000	
Mrs. A's Loan repaid	25,000	
Drawings	17,000	77,000
Cash Balance as on December 31, 2003		7,000

Decrease in stock	10,000	
Increase in creditors	4,000	
Increase in debtors	(20,000)	
Net Cash flows from operating activities		59,000
II. Cash Flows from Investing Activities		
Sale of machinery	5,000	
Purchase of land	(10,000)	
Purchase of building	(25,000)	
Net cash flows from investment activities		(30,000)
III. Cash Flows from Financing Activities		
Loan from bank	10,000	
M/s. A's loan repaid	(25,000)	
Drawings	(17,000)	
Net Cash flow from financing activities		(32,000)
Net increase (decrease) in cash and cash equivalent		(3,000)
Cash and cash equivalents at the beginning of the period		10,000
Cash and cash equivalents at the end of the period		7,000

Note

- Cash comprises cash in hand and demand deposits

Cash equivalents are short-term highly liquid investments that are readily convertible into known amounts of cash and which are subject to an insignificant risk of changes in value. Self

Activity - 6

The following are the balance Sheets of Konica Ltd. For the year ending 31st December, 2002 and 2003.

Liabilities	2002 Rs.	2003 Rs.	Assets	2002 Rs.	2003 Rs.
Share Capital	2,00,000	3,00,000	Fixed Assets	1,60,000	2,00,000
P & L A/c.	1,20,000	1,60,000	Add: additions	40,000	60,000
Sundry creditors	60,000	50,000		2,00,000	2,60,000
Provision for taxation	40,000	50,000	Less: Depn.	18,000	24,000
				1,82,000	2,36,000
Proposed Dividend	20,000	30,000	Investments	8,000	16,000
			Stock	1,60,000	2,18,000
			Debtors	60,000	80,000
			Cash	30,000	40,000
	4,40,000	5,90,000		4,40,000	5,90,000

Funds from operations	2,18,000	Purchase of Plant	1,30,000
Increase in creditors	28,000	Decrease in bills payable	4,000
		Increase in debtors	40,000
		Increase in stock	32,000
		Increase in B/R	10,000
		Cash balance as on 31-12-99:	
		Cash in hand	10,000
		Cash at bank	8,000
	<u>3,81,000</u>		<u>3,81,000</u>

Working Notes

Cash from Operations

Funds from operations		2,18,000
Add : Increase in Creditors		28,000
		<u>2,46,000</u>
Less : Decrease in Bills Payable	4,000	
Increase in Debtors	40,000	
Increase in Stock	32,000	
Increase in Bills Receivable	10,000	86,000
Cash from operations		<u>1,60,000</u>

In the absence of information, it has been presumed that there is no profit (loss) and no accumulated depreciation on that part of land and buildings, which has been sold.

Dr.	Adjusted Profit & Loss Account		Cr.
	Rs.		Rs.
To Depreciation on Plant	10,000	By Balance b/d.	30,000
To Dep. on buildings	20,000	By Funds from operations	
To Goodwill written off	25,000	(Balancing figure)	2,18,000
To Provision of taxation	45,000		
To Interim dividend	20,000		
To Dividend proposed	50,000		
To Transfer to General Reserve	30,000		
To Balance c/d.	48,000		
	<u>2,48,000</u>		<u>2,48,000</u>

net cash used in operating activities. In order to calculate the net cash flows from operating activities, it is necessary to replace revenues and expenses with actual receipts and payments in cash. This is done by eliminating the non-cash revenues and non-cash expenses from the given earned revenues and incurred expenses. There are two methods of converting net profit into net cash flows from operating activities Viz. Direct method and Indirect method.

3.

Profit made during the year		1,30,000
Add: Decrease in Debtors		3,000
Increase in Creditors		5,000
Increase in outstanding expenses		200
Decrease in pre paid expenses		100
		<u>1,38,300</u>
Less: Increase in Bills receivable	2,500	
Increase in accrued income	150	
Decrease in bills payable	2,000	
Decrease in income received in advance	50	4,700
Cash From Operations		<u><u>1,33,600</u></u>

4. The cash flow statement differs from funds flow statement in the following respects:

Funds flow statement is prepared on the basis of working capital concept of funds. Whereas cash flow statement is based on cash concept of fund. Funds flow statement summarizes the financial changes that have taken place between two dates of the balance sheets in terms of sources and application of funds. Cash flow statement shows the changes in the financial position of the firm in terms of cash. In case of funds flow statement, besides cash, non cash items that change the funds position is also taken into account. Funds flow statement is prepared based on accrual accounting concept. Whereas in cash flow statement all transactions effecting the cash or cash equivalents are only taken into consideration. Funds flow statement is the main statement but, the cash flow statement is supplementary to the funds flow statement. Funds flow analysis is a broader concept. It takes into account both long-term and short-term plans. But cash flow statement deals with only those transactions which involve cash.

5.

Sources	Rs.	Application	Rs.
Opening Balance of Cash	45,000	Purchase of Land	24,000
Issue of Share Capital	75,000	Decrease in Trade Crs.	37,500
Cash Operating Profit (Diff. in P&L A/c.)	19,500	Increase in Stock in Trade	15,000
Decrease in Debtors	7,500	Closing Balance	70,500
	<u>1,47,000</u>		<u>1,47,000</u>

Investments A/c.

	Rs.		Rs.
To Balance b/d.	8,000		
To Bank (Balancing fig)	8,000	By Balance c/d.	16,000
	16,000		16,000

Provision for taxation A/c.

	Rs.		Rs.
To Bank	44,000	By Balance c/d.	40,000
To Balance c/d.	50,000	By P & L A/c.	54,000
	94,000		94,000

Proposed dividends A/c.

	Rs.		Rs.
To Bank	24,000	By Balance b/d.	20,000
To Balance c/d.	30,000	By P & L A/c.	34,000
	54,000		54,000

10.8 SELF ASSESSMENT QUESTIONS

A. Short Answer Questions

1. What is a cash flow statement? How is it prepared?
2. What do you mean by cash flow analysis?
3. State the methods of constructing a cash flow statement.
4. How do you ascertain cash from investing activities?

B. Long Answer Questions

1. Explain in detail the usefulness of cash flow statement for the managers.
2. Distinguish between funds flow statement and cash flow statement.
3. Describe AS 3: Cash Flow Statement, issued by ICAI. Illustrate how the CashFlow Statement is prepared according to AS 3.

Additional information

(i) Sales 60,000; (ii) Cost of materials sold Rs.3, 80,000; (iii) Wages 46,000; (iv) Rent 12,000; (v) General Charges 94,000; (vi) Depreciation 6,000;

The depreciation account shows a balance of Rs. 32,000 and Rs. 38,000 at the end of 2002 and 2003 respectively.

(Answer: Cash from Operations Rs.44,000)

3. From the following Balance sheets prepare Cash Flow Statement for the year 2003:

Balance sheets

Liabilities	Balance sheets		Assets	Balance sheets	
	1.1.2003	31.12.2003		1.1.2003	31.12.2003
Share Capital	2,00,000	2,00,000	Cash	8,000	10,000
Profit and Loss A/c.	50,000	90,000	Bank	22,000	20,000
Bank Loan	10,000	-	Debtors	10,000	20,000
Creditors	15,000	20,000	Stock	25,000	15,000
Outstanding Expenses	5,000	1,000	Non-Current Assets	2,35,000	2,75,000
Provision for Taxation	20,000	25,000			
Unclaimed Dividend	-	4,000			
	<u>3,00,000</u>	<u>3,40,000</u>		<u>3,00,000</u>	<u>3,40,000</u>

Net Profit for the year 2003 after providing Rs. 20,000 as depreciation was Rs. 60,000. During 2003, Company declared equity dividend @ 10%, and paid Rs. 15,000 as income tax.

(Answer: Cash flows from operating activities 86,000;
Cash flows from investing activities 60,000;
Cash flows from financing activities 26,000.)

4. Profit and Loss Account for the year ending 31st December,2003 and the balance sheets as on 31st December, 2002 and 31st December, 2003 are as follows of Visakha Marine Foods Limited:

Profit and Loss Account for the year ending 31, Dec. 2003

	Rs.
Sales	8,58,000
Gain on sale of Investments	3,000
Dividend Income	9,000
Interest Income	1,000
Cost of Goods Sold	8,61,000
Selling and Administrative Expenses	1,12,000
Interest Expenses	43,000
Loss on sale of Plant	11,000
Profit Before Tax (Loss)	(1,56,000)
Income tax	0
Profit After Tax (Loss)	(1,56,000)

5. From the following information as contained in the Income Statement and the Balance Sheet of Strong Ltd., you are required to prepare a cash flow statement using (i) direct method; and (ii) indirect method:

**Income Statement and Reconciliation of Earnings
for the year ended 31st March, 2003**

Net sales		40,32,000
Less: Cost of sales	31,68,000	
Depreciation	96,000	
Salaries and Wages	3,84,000	
Operating expenses	1,28,000	
Provision for taxation	1,40,800	39,16,800
Net operating profit		1,15,200
Non-recurring income:		
Profit on sale of equipment		19,200
Profit for the year		1,34,400
Retained-earnings (balance in Profit and Loss Account brought forward)		2,42,880
		3,77,280
Dividend declared and paid during the year		1,15,200
Profit and Loss Account balance as on 31 st March, 2003		2,62,080

Comparative Balance Sheets

Particulars	As on 31.3.2002	As on 31.3.2003
Fixed Assets:		
Land	76,800	1,53,600
Buildings and equipments	5,76,000	9,21,600
Current assets:		
Cash	96,000	1,15,200
Debtors	2,68,000	2,97,600
Stock	4,22,000	1,53,600
Advances	12,480	14,400
Total	14,52,480	16,56,000
Capital	5,76,000	7,10,000
Surplus in Profit and Loss A/c.	2,42,880	2,62,080
Sundry creditors	3,84,000	3,74,400
Outstanding expenses	38,400	76,800
Income-tax payable	19,200	21,120
Accumulated depreciation on building and equipments	1,92,000	2,11,200
Total	14,52,480	16,56,000

BLOCK - IV : MANAGERIAL DECISION MAKING

This block discusses the tools that provide the management with useful information for decision-making. It consists of three units i.e., unit 11 to 13.

Unit 11 deals with the techniques of CVP analysis.

Unit 12 explains how the management takes decisions involving alternative choices such as make or buy, add or drop products, operate or shutdown, etc.

The last unit (i.e., Unit 13) describes the meaning, features and significance of responsibility accounting and the preparation of responsibility accounting reports.

UNIT - 11 : COST-VOLUME-PROFIT ANALYSIS

Aims and Objectives

This unit is devoted to explain various aspects relating to Cost-Volume-Profit Analysis such as concept of marginal cost, characteristics of marginal costing, advantages and disadvantages of marginal costing, analysis of cost, volume, profit concepts and the like.

After studying this unit, you should be able to:

- explain the concepts 'marginal cost' and 'marginal costing';
- recognize marginal cost and related costs;
- analyse the relationship between Cost, Volume and Profit; and
- calculate Break-Even Point, Contribution Ratio and other values.

Structure

- 11.0 Introduction
- 11.1 Concepts of Marginal Cost and Marginal Costing
- 11.2 Characteristics of Marginal Costing
- 11.3 Advantages and Disadvantages of Marginal Costing
- 11.4 Break-Even or Cost-Volume-Profit Analysis
- 11.5 Calculation of Break-Even Point, P/V Ratio and Margin of Safety Ratio
- 11.6 Summary
- 11.7 Model Answers to Activities
- 11.8 Self Assessment Questions
- 11.9 Further Readings
- 11.10 Key Words

11.0 INTRODUCTION

This unit, focuses on the cost-volume-profit relationship. It is an analysis of three factors viz., cost, volume and profit. These three factors are closely inter-linked and inter-dependent on one another. It would help the management in solving a variety of problems relating to planning and control. The profit planning function is linked with Cost-Volume-Profit (CVP) analysis. In CVP analysis, marginal costing is a technique through which variable costs are taken into account for the purpose of product costing, inventory valuation and other important managerial decisions. Marginal cost arises from the production of an additional unit. It is based on the main distinction between product cost and period cost. In marginal costing product costs are treated as relevant costs, which are important for taking managerial decisions. A cost is said to be relevant if it influences the decision of the management.

and the balance is known as contribution. When fixed costs are deducted from contribution, the balance is known as profit. The statement showing this procedure of profit determination is known as Marginal Income Statement or Marginal Profit & Loss Account.

v) Break-Even Point is prime component of this technique.

Marginal Costing is a technique, which studies in increase or decrease in total production costs as a result of increase or decrease in the units of production and which recognizes variable costs as main part of production costs.

11.3 ADVANTAGES AND DISADVANTAGES OF MARGINAL COSTING

Advantages of Marginal Costing

The technique of Marginal Costing is of immense value for marginal decisions. It can be a significant tool for control and profit planning. The following are the advantages of marginal costing:

- i) Management can easily understand the income statement prepared by allocating variable and fixed expenses separately. Stock valuation is simple.
- ii) The technique is less complicated and free from confusion since fixed costs are not included in the cost of production.
- iii) There is no need for complicated and expensive method of finding out overhead recovery rate, its modification from time to time and allocating overheads.
- iv) Under this technique, net income is not affected by the changes in production level and/or changes in stock volume; in fact profit is directly related to sales. This facilitates the management to ascertain the real profit in the face of changing sales volume.
- v) It serves as good basis for meaningful reporting.
- vi) This technique helps in profit planning, particularly of short term nature. It facilitates the analysis of Cost-Volume-Profit relationship.
- vii) It also serves as a tool of profitability appraisal.
- viii) The technique of marginal costing serves as a vehicle for cost control and cost reduction. It facilitates the preparation of flexible budget by differentiating variable costs and fixed costs.
- ix) The most use of this technique is in the area of price-policy and its determination.

Disadvantages of Marginal Costing

The following arguments are put forward to indicate its demerits:

- i) This technique lays too much emphasis on selling function, and as such production function has been considered to be less significant. But both the functions carry equal importance from the point of view of business efficiency.
- ii) Valuation of stock at marginal cost may amount to under-valuation from the financial managers view point and this may have working capital problem.

Assumptions of Break-Even Analysis

The Break-even analysis is based on the following assumptions:

- i) Costs can be classified into fixed and variable components.
- ii) The principle of cost variability is valid.
- iii) Variable costs vary proportionately with the volume changes.
- iv) Fixed costs remain constant irrespective of the level of activity.
- v) Selling price does not change with the changes in volume.
- vi) There is no change in the general price level.
- vii) There is only one product or in the case of multiple products sales mix remains constant.
- viii) There is no synchronization between production and sales.
- ix) Productivity per worker remains constant.
- x) Plant capacity and efficiency remain unaffected.

Usefulness of CVP or BEP Analysis

Break-Even Analysis is considered to be the most useful technique of profit planning and control. It is an important device to explain the relationship between cost, volume and profit. It is a simple tool employed to graphically represent complicated accounting data. It provides basic information facilitating to improve the profit and is used for analysing the risk implication of alternative actions. Thus, it serves as a more useful diagnostic tool in the hands of management.

Limitations of Break-Even Analysis

The break-even analysis suffers from the following limitations:

- i) It is very difficult, if not impossible, to separate costs into fixed and variable components.
- ii) The assumption that the total fixed cost remains constant over the entire volume range does not stand to reason.
- iii) The assumption of constant selling price and unit variable cost is also not valid.
- iv) The application of Break-even analysis to multi-product firms becomes very difficult.
- v) The BE analysis is a short-term concept. It has a limited application in the long range planning.
- vi) It is a static tool with very limited practical application.

(or)

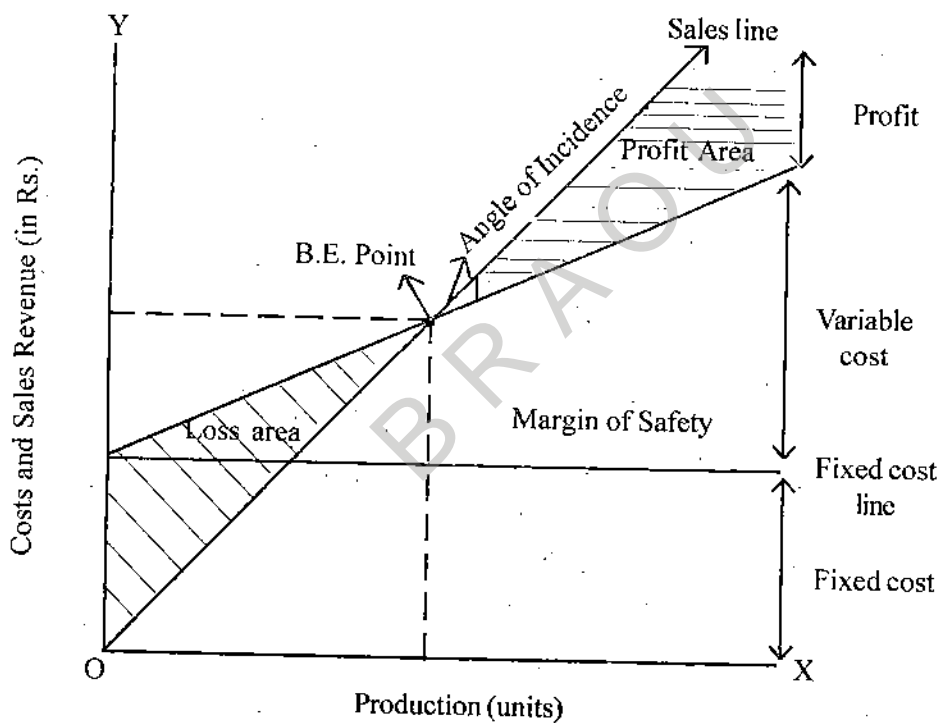
$$\text{Sales} = \text{Fixed cost} + \text{Variable cost} + \text{Net profit}$$

Graphic Presentation

Under the Algebraic methods, the BEP can be computed with the set of figures already given but by the graphical representation, such a set of figures can be determined without involving any separate calculation. The graphic technique can be represented in the form of either break-even chart or profit-value graph.

The break-even point can be computed graphically. A break-even chart is a graphical representation of marginal costing. The break-even chart portrays a pictorial view of relationships between costs, volume and profits. It shows the break-even point and also indicates the estimated profit or loss at various levels of output. The break-even as indicated in the chart is the point at which total cost line and the total sales line intersect.

Traditional Break-Even Chart



Contribution

Contribution is the difference between sales and variable cost or marginal cost of sales. It may be defined as the excess of selling price over variable cost per unit. Contribution is also known as contribution margin or gross margin. Contribution, being the excess of sales over variable cost, is the amount contributed towards fixed expenses and profit.

$$\begin{aligned} \text{Contribution} &= \text{Sales} - \text{Variable cost} \quad (\text{or}) \quad \text{Contribution per unit} = \text{Selling price per unit} - \\ &\text{Variable cost per unit} \quad (\text{or}) \quad \text{Contribution} = \text{Fixed costs} + \text{Profit} (- \text{Loss}) \end{aligned}$$

$$\text{Composite Break-Even Point (in sales value)} = \frac{\text{Total Fixed Costs}}{\text{Composite P/V Ratio}}$$

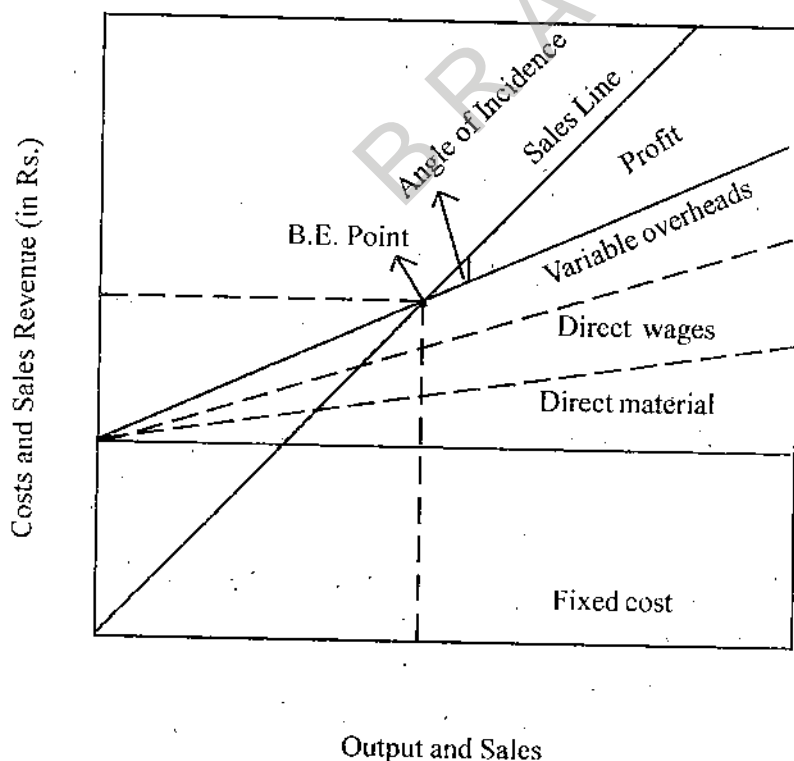
$$\text{Composite P/V Ratio} = \frac{\text{Total Fixed Costs}}{\text{Composite P/V Ratio}} \times 100$$

Cash Break-Even Chart

Break-Even Charts are generally drawn based on profit and loss data from a given scale of operation. Such charts can also be utilised to disclose the effect of changes in the scale of operations upon cash. This needs a slight modification in the basic approach to graphical presentation of break-even analysis.

While drawing cash break-even chart the following points are to be considered:

- i) Fixed expenses are to be classified as those involving cash payments and those not involving cash payments like depreciation.
- ii) As the cash break-even chart is designed to include only actual payments and not expenses incurred. Only time lag in the payment of items included under variable costs must be duly considered.
- iii) Equal care must be bestowed on the period of credit allowed to the debtors for the purpose of calculating the amount of cash to be received from them, during a stipulated period. A model of cash flow B.E. chart is as follows:



Cash Break-Even Point

In the present competitive world of business, it may be difficult for new industrial units to achieve the break even point in the initial years. Thus, the concept of cash break-even point has

Profit Volume Graph

The profit-volume graph discloses the relationship of profit to volume. The Profit Volume (PV) graph is also referred to as PV chart and it is supplementary to CVP graph. The utility of PV graph is that it depicts the direct relationship between sales volume and quantum of profit at different levels of activity. It is drawn on the basis of information as is required for the construction of break even chart.

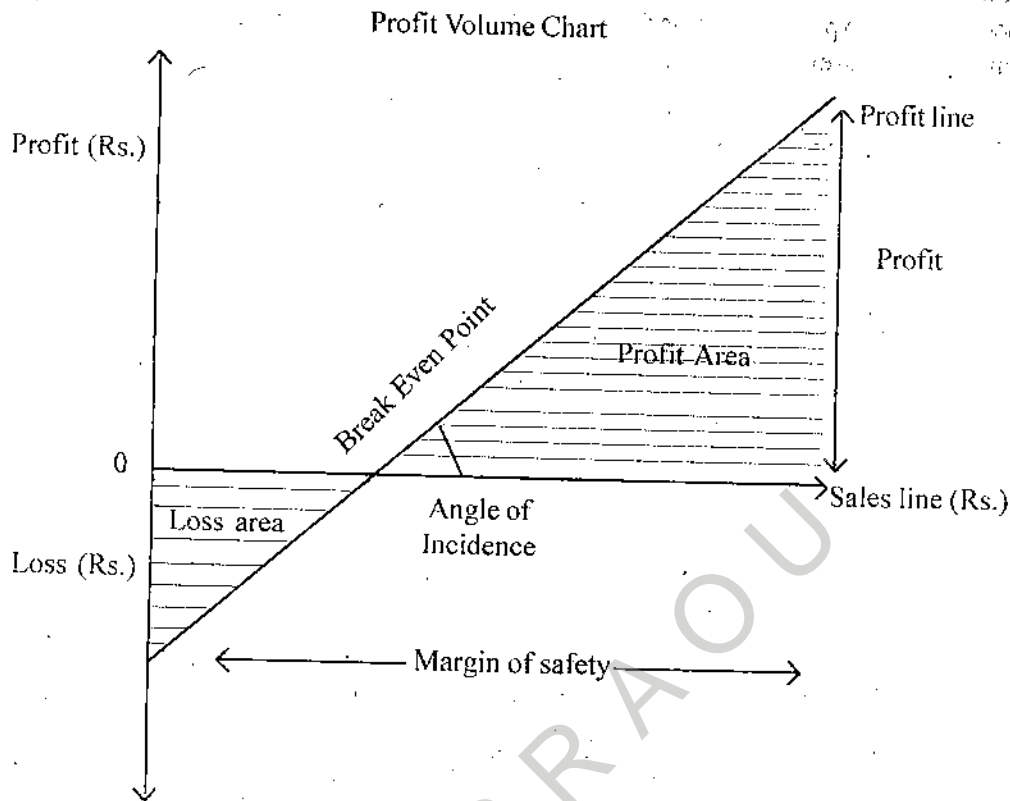


Illustration - 1

From the following particulars calculate:

Selling price per unit Rs. 15, variable cost per unit Rs. 10, fixed expenses 1,50,000.

- Contribution
- PV Ratio
- Break-Even in units and rupees
- What will be the selling price per unit if the break even is brought down to 25,000 units?

Solution

a) Contribution = Sales price per unit - Variable cost per unit

$$= \text{Rs. } 15 - \text{Rs. } 10 = \text{Rs. } 5$$

b) PV Ratio = $\frac{\text{Contribution}}{\text{Sales}} \times 100$

$$= \frac{5}{15} \times 100 = 33 \frac{1}{3}\%$$

Break-even point in rupees = BEP in units \times Selling price

$$= 12,000 \times \text{Rs. } 40$$

$$= 4,80,000.$$

b) Output earn a profit of Rs. 1,20,000:

$$= \frac{\text{Fixed expenses} + \text{Profit}}{\text{Selling price per unit} - \text{Marginal cost per unit}}$$

$$= \frac{1,80,000 - 1,20,000}{40 - 25}$$

$$= \frac{3,00,000}{15}$$

$$= 20000 \text{ units}$$

c) Suppose number of units to be sold = N

$$N = \frac{\text{Fixed Expenses} + \text{Desired Profit}}{\text{Contribution Per Unit}}$$

$$N = \frac{1,80,000 + 15/100 [N \times 40]}{15}$$

$$= 15 N = 1,80,000 + \frac{600 N}{100}$$

$$= 15 N = 1,80,000 + 6 N$$

$$= 15 N - 6 N = 1,80,000$$

$$= 9 N = 1,80,000.$$

$$N = \frac{180000}{9} = 20000 \text{ units.}$$

Illustration - 3

Bindu Traders Ltd. manufactures one identical product "A". The following figures are available for two successive years.

	Year I	Year II
Sales	3,00,000	3,60,000
Fixed costs	90,000	1,20,000
Variable costs	1,50,000	2,16,000

The directors are interested to know Profit-Volume Ratio, BEP, Margin of Safety and Margin of Safety Ratio.

Calculation of sales at break-even point

Sales	50,00,000
(-) Margin of safety 40%	<u>20,00,000</u>
Sales at Break-Even Volume	<u>30,00,000</u>

ii) Calculation of Contribution at Break-even sales

$$\begin{aligned} \text{P/V Ratio} &= \frac{\text{Contribution}}{\text{Break-even sales}} \times 100 \\ \text{Contribution} &= \text{Break even sales} \times \text{P/V Ratio} \\ &= \text{Rs. } 30,000 \times 50\% \\ &= \text{Rs. } 15,00,000. \end{aligned}$$

Calculation of fixed costs

Sales at Break-even point	30,00,000
(-) Contribution at BEP	<u>15,00,000</u>
Fixed costs	<u>15,00,000</u>

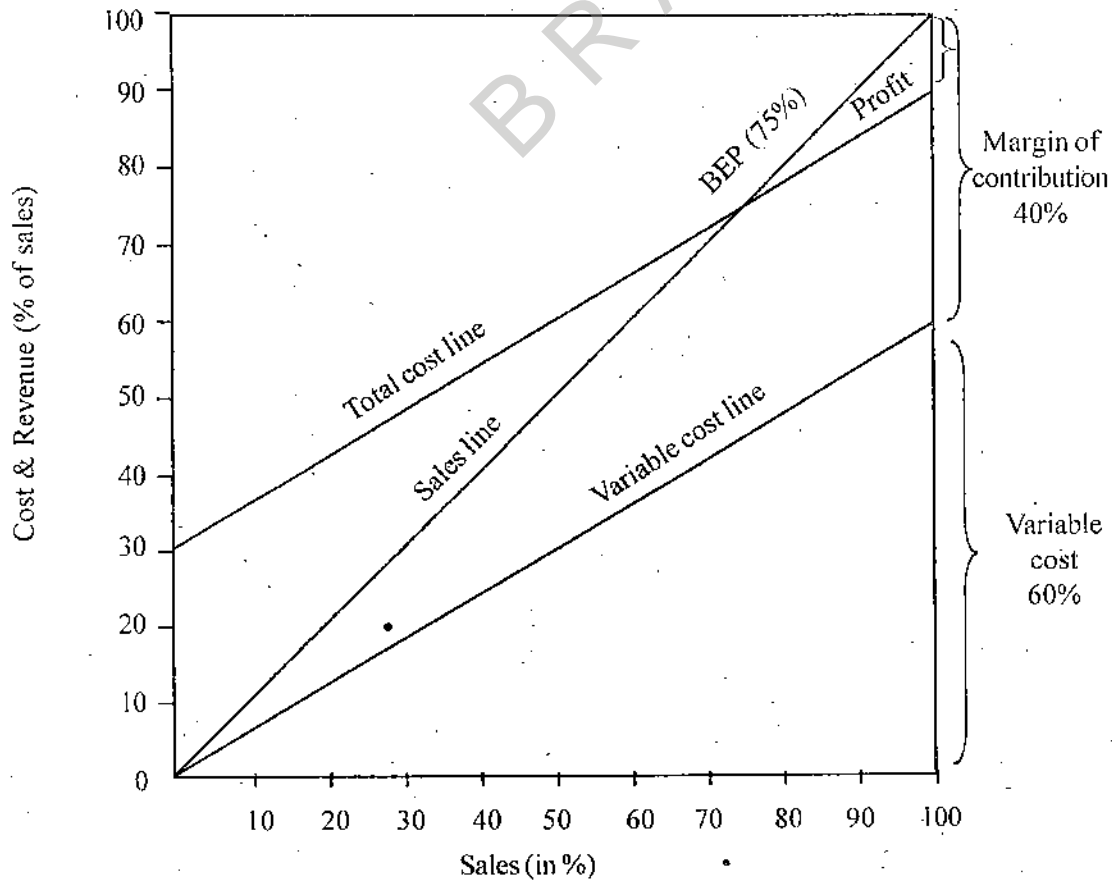
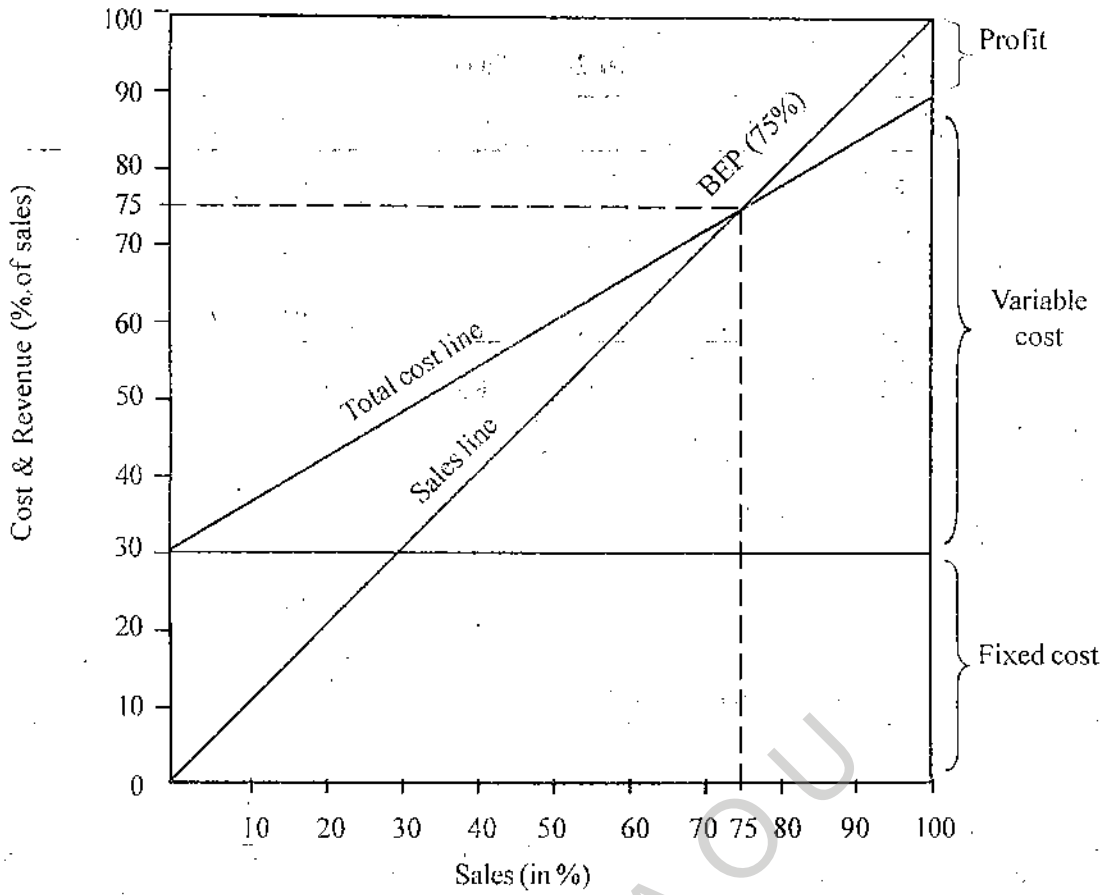
Calculation of profit

Contribution on total sales	25,00,000
Less: Fixed costs	<u>15,00,000</u>
Profit	<u>10,00,000</u>

Verification

$$\begin{aligned} \text{i) Break-Even Point} &= \frac{\text{Fixed costs}}{\text{P/V Ratio}} \\ &= \frac{15,00,000}{50\%} = \text{Rs. } 30,00,000 \\ \text{ii) Total Sales} &= \frac{\text{Contribution}}{\text{P/V Ratio}} \\ &= \frac{25,00,000}{50\%} = \text{Rs. } 50,00,000 \\ \text{iii) Margin of Safety} &= \frac{\text{Profit}}{\text{P/V Ratio}} \\ &= \frac{10,00,000}{50\%} = \text{Rs. } 20,00,000 \\ \text{Margin of Safety Ratio} &= \frac{20,00,000}{50,00,000} \times 100 = 40\% \end{aligned}$$

BE Charts



$$= \frac{75,000}{1,50,000} \times 100$$

$$= 50\%$$

b) S Ltd.

$$\text{BEP} = \frac{35,000}{1 - \frac{1,00,000}{1,50,000}}$$

$$= \frac{35,000}{0.333 \text{ or } 1/3}$$

$$= 3,500 \times \frac{3}{1}$$

$$= \text{Rs. } 1,05,000.$$

$$\text{PV Ratio} = \frac{\text{Marginal Contribution}}{\text{Sales}} \times 100$$

$$= \frac{50,000}{1,50,000} \times 100$$

$$= 33 \frac{1}{3}\%$$

$$\text{Margin of safety} = \text{Actual sales} - \text{BE Sales}$$

$$= 1,50,000 - 1,05,000 = 45,000$$

$$\text{Margin of Safety Ratio} = \frac{\text{MOS}}{\text{Actual Sales}} \times 100$$

$$= \frac{45,000}{1,50,000} \times 100$$

$$= 30\%$$

Comments / Suggestions

- i) From the above calculation it is clear that P/V Ratio is higher in case of S Ltd. Therefore, in case of heavy demand S Ltd., will earn profits.
- ii) In case of low demand B Ltd., will be an advantageous position as fixed costs and break even point are low, and consequently margin of safety is higher. Assuming sales at Rs.1,00,000. B Ltd. will still earn profit while S Ltd. will incur a loss.

$$P/V \text{ Ratio} = \frac{\text{Marginal Contribution}}{\text{Sales}} \times 100\% = 37.5\% \quad 50\%$$

$$\text{ii) Break-Even Point} = \frac{\text{Fixed Assets}}{\text{PV Ratio}}$$

$$\text{Hari Ltd.} = \frac{5,500}{37.5\%} = \text{Rs. } 14,667$$

$$\text{Charitha Ltd.} = \frac{8,000}{50\%} = \text{Rs. } 16,000$$

$$\text{iii) Margin of Safety (M/S)} = \text{Budgeted Sales} - \text{Break-Even Sales}$$

$$\text{Hari Ltd.} = 20,000 - 14,667 = \text{Rs. } 5,333$$

$$\text{Charitha Ltd.} = 20,000 - 16,000 = \text{Rs. } 4,000$$

$$\text{Budgeted Sales} \quad 20,000$$

$$\text{Budgeted capacity} \quad 80\%$$

$$\text{M/S as \% of total capacity} = \frac{80\%}{20,000} \times \text{M/S}$$

For:

$$\text{Hari Ltd.} = 80\% \times \frac{5,333}{20,000}$$

$$= 21.3\%$$

$$\text{Charitha Ltd.} = 80\% \times \frac{4,000}{20,000}$$

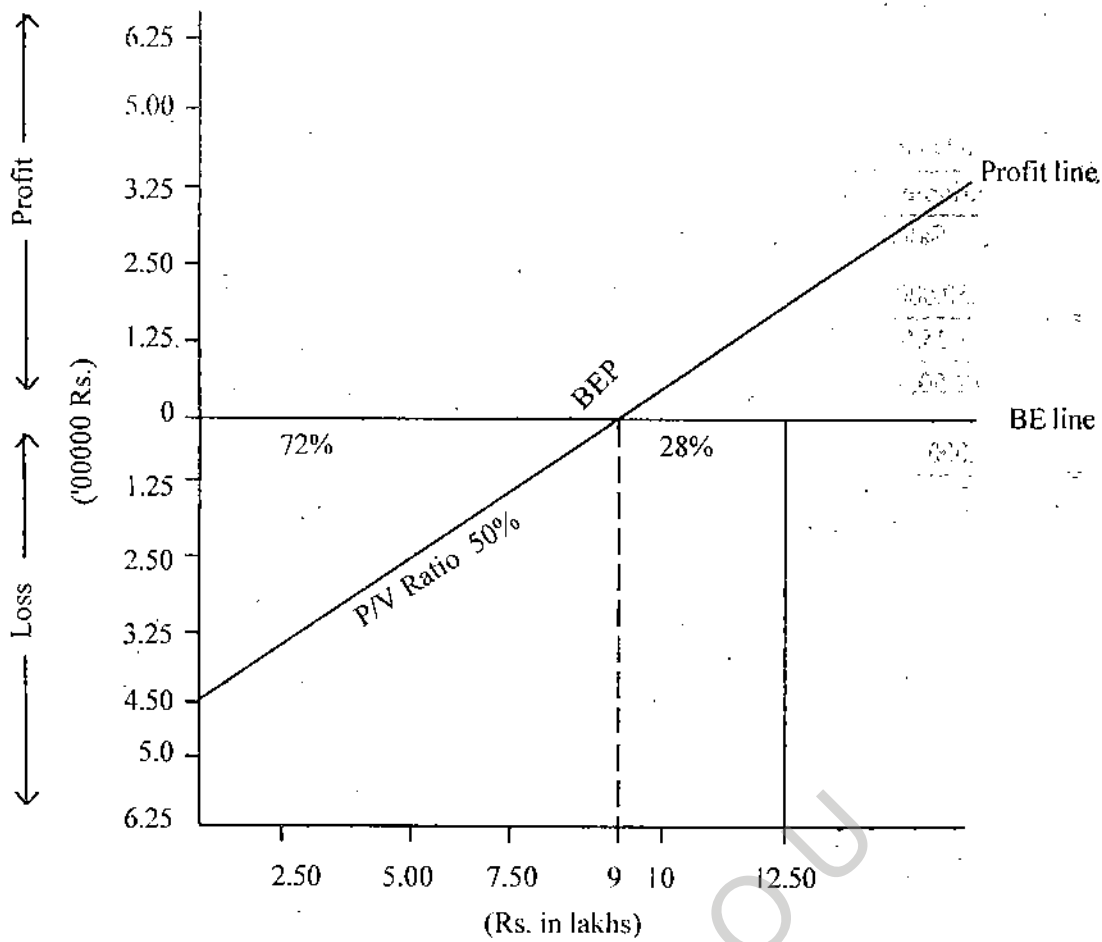
$$= 16\%$$

Illustration - 8

The following figures apply to two separate companies X and Y.

	X Rs.	Y Rs.
Annual Sales	12,50,000	12,50,000
Annual Profit	1,75,000	1,75,000
Fixed Costs	4,50,000	1,25,000
Variable Costs	6,25,000	9,50,000

Prepare a profit-graph for each of the companies and determine the break-even points of each. What deductions can you make from the charts applicable to various market conditions for the products of each company.



Y Company

$$\begin{aligned} \text{BEP} &= \frac{1,25,000}{1 - \frac{9,50,000}{12,50,000}} \\ &= \frac{12,50,000}{0.24} \\ &= \text{Rs. } 5,20,833. \end{aligned}$$

$$\begin{aligned} \text{ii) P/V Ratio} &= \frac{\text{Marginal Contribution}}{\text{Sales}} \times 100 \\ &= \frac{12,50,000 - 9,50,000}{12,50,000} \times 100 \\ &= \frac{3,00,000}{12,50,000} \times 100 \\ &= 24\% \end{aligned}$$

Represent each of the above figure graphically on break even chart, and determine from the chart the break even point.

Solution

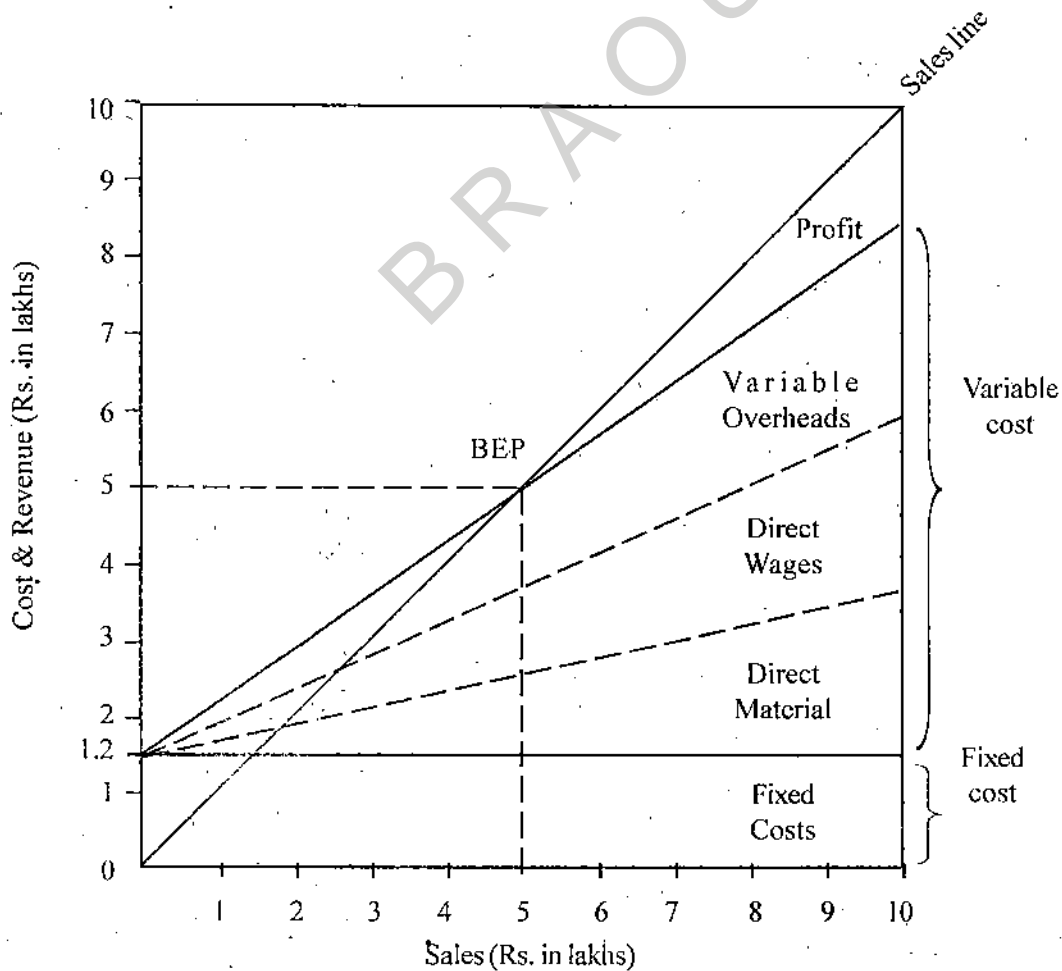
$$\text{BEP} = \frac{\text{Fixed Costs}}{1 - \frac{\text{Variable Cost}}{\text{Sales}}}$$

$$\text{BEP} = \frac{1,20,000}{1 - \frac{7,60,000}{10,00,000}}$$

$$= \frac{1,20,000}{\frac{2,40,000}{10,00,000}}$$

$$= \frac{1,20,000}{0.24}$$

$$= \text{Rs. } 5,00,000.$$



The break even point occurs at 50% activity i.e., at a sales volume of Rs. 5,00,000.

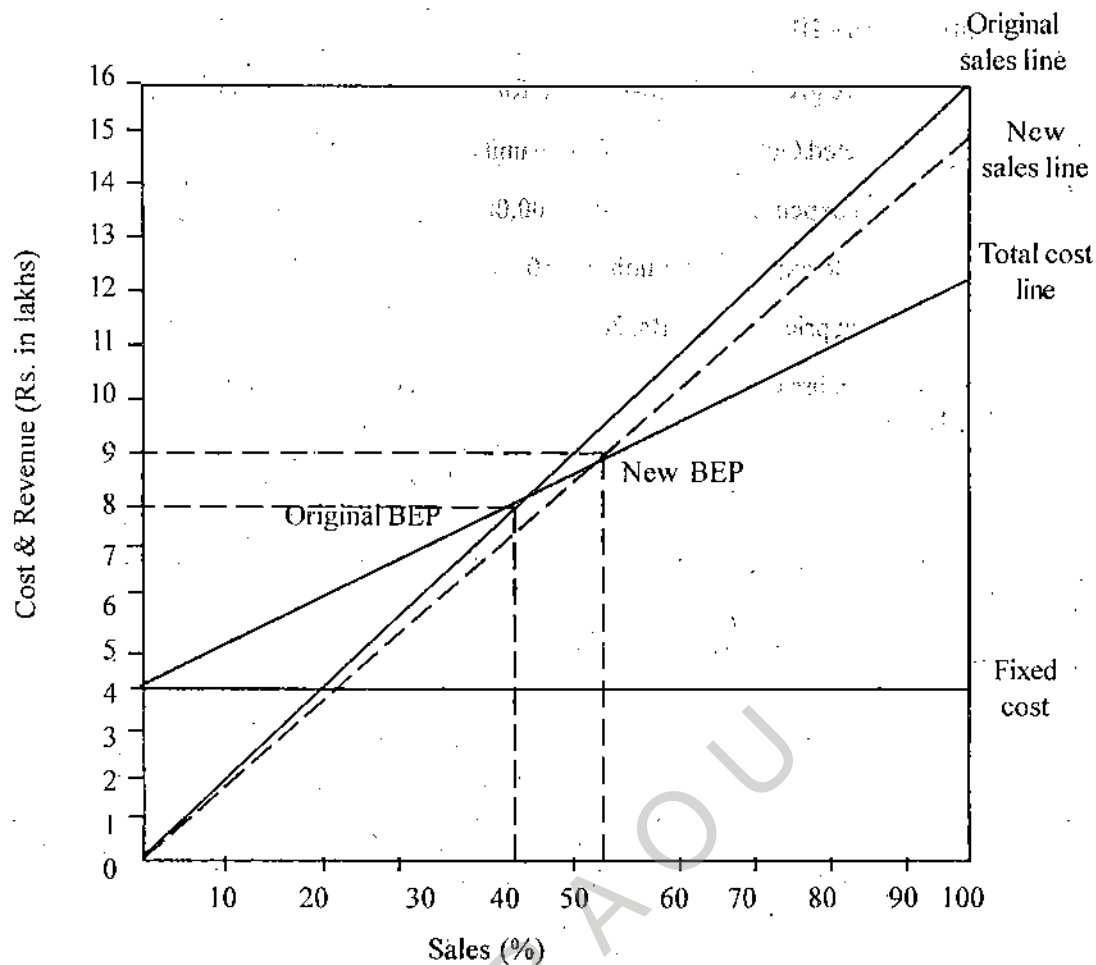


Illustration - 11

A company produces 1,00,000 units of an article and sells them at the rate of Rs. 10 each. The marginal cost per unit is 60% of the selling price and total fixed costs of the concern are Rs.2,00,000. Draw a break even chart showing (i) Break-even point (ii) Margin of safety and (iii) Angle of incidence.

$$i) \quad \text{BEP} = \frac{\text{Fixed Costs}}{1 - \frac{\text{Variable Cost}}{\text{Sales}}}$$

$$\text{BEP} = \frac{2,00,000}{1 - \frac{6,00,000}{10,00,000}}$$

$$= \frac{2,00,000}{0.4}$$

$$= \text{Rs. } 5,00,000.$$

$$ii) \quad \text{Margin of Safety} = \text{Total sales} - \text{Break-even sales}$$

$$= 10,00,000 - 5,00,000$$

$$= \text{Rs. } 5,00,000.$$

$$\begin{aligned}
 \text{ii) } \text{BEP} &= \frac{\text{Fixed Costs}}{1 - \frac{\text{Variable Cost}}{\text{Sales}}} \\
 \text{BEP} &= \frac{1,80,000}{1 - \frac{3,00,000 \times 120\%}{6,00,000}} \\
 &= \frac{1,80,000}{4/10} = \frac{1,80,000}{0.4} \\
 &= \text{Rs. } 4,50,000.
 \end{aligned}$$

Illustration - 13

Assuming that the cost structure and selling prices remain the same in periods I and II, find out:

- Profit volume ratio
- Break-even point for sales
- Profit when sales are Rs. 1,00,000
- Sales required to earn a profit of Rs. 20,000 and
- Margin of safety at a profit of Rs. 15,000.

Period	Sales	Profit
I	1,20,000	9,000
II	1,40,000	13,000

Solution

Computation of changes in profit and sales.

Periods	I	II	Changes
Sales	1,20,000	1,40,000	20,000
Profit	9,000	13,000	4,000

$$\begin{aligned}
 \text{a) } \text{P/V Ratio} &= \frac{\text{Change in Profit}}{\text{Change in Sales}} \times 100 \\
 &= \frac{4,000}{20,000} \times 100 \\
 &= 20\%.
 \end{aligned}$$

$$\text{b) } \text{BEP Sales (in Rs.)} = \frac{\text{Fixed Costs}}{\text{P/V Ratio}}$$

Here it is first necessary to find out contribution and then deduct profit from contribution.

Activity - 4

From the following data you are required to calculate the break even point and net sales value at this point.

Direct material cost per unit	8
Direct labour cost per unit	5
Fixed overhead	24,000
Variable overheads @ 60% on direct labour	
Selling price per unit	25
Trade discount	4%

If sales are 15% and 20% above the break -even volume, determine the net profit.

11.6 SUMMARY

In this unit, a focus is made on the Cost-Volume-Profit [CVP] relationship. It is an analysis of three different factors viz., cost, volume and profit. These three factors are closely inter-linked and inter-dependent on each other. An attempt is made through CVP analysis to measure the variations of cost with change in the volume of production. CVP analysis would help the management in solving a variety of problems relating to planning and control. The profit planning function, therefore is linked with CVP analysis. In CVP analysis, marginal costing is a technique through which variable costs are taken into account for the purpose of product costing, inventory valuation and other important managerial decisions.

Marginal cost arises from the production of additional unit. It is difference between product cost and period cost. A cost item may be said to be relevant if it influences the decision of the management. From this, it is concluded that variable costs are relevant costs. Relevancy is a necessity for the purpose of taking a number of managerial decisions. Break even analysis establishes the relationship between costs and profit with sales volume. It also helps in the determination of that volume of sales at which costs and revenues are in equilibrium. The equilibrium point is often referred to as the break-even-point. It is a no profit, no loss point. Break even analysis is an important tool of profit planning for the modern financial management. The financial analysis should bear in mind the underlying assumptions and the corresponding limitations and adjust the data most appropriately using P/V Ratio, margin of safety and other values to the requirements. Thus, CVP analysis or break even analysis are useful in managerial decision making process.

11.7 MODEL ANSWERS TO ACTIVITIES

1. The break-even analysis is the most widely known form of cost-volume-profit analysis. The term break - even analysis is used in two senses-narrow sense and broad sense. In the broad sense, break even analysis refers to the study of relationship between costs, volume and profits at different levels of sales or production. In the narrow sense, it refers

b) Profit when sales are Rs. 1,20,000

$$\begin{aligned}\text{Contribution} &= \text{Sales} \times \text{P/V Ratio} \\ &= 1,20,000 \times 20/100 = 24,000\end{aligned}$$

$$\begin{aligned}\text{Profit} &= \text{Contribution} - \text{Fixed Cost} \\ &= 24,000 - 20,000 \\ &= \text{Rs. } 4,000\end{aligned}$$

c) Loss when sales go down to the level of 60,000: Profit/Loss = Contribution - Fixed cost

$$\text{Sales} \times \text{Contribution Ratio} - \text{Fixed Cost}$$

$$= 60,000 \times 20/100 - 20,000$$

$$= 12,000 - 20,000$$

$$\text{Loss} = \text{Rs. } 8,000.$$

d) Sales needed to earn a profit of Rs. 10,000.

$$\begin{aligned}\text{Sales required} &= \frac{\text{Fixed Cost} + \text{Desired Profit}}{\text{PV Ratio}} \\ &= \frac{20,000 + 10,000}{20\%} = \frac{30,000}{20\%} = \text{Rs. } 1,50,000\end{aligned}$$

Sales required to earn a Profit of Rs. 10,000 = Rs. 1,50,000

e) Calculation of Margin of Safety

$$\text{Margin of Safety} = \text{Actual Sales} - \text{Sales at BEP}$$

$$= 1,30,000 - 1,00,000 = 30,000$$

$$\text{Margin of Safety} = \text{Rs. } 30,000$$

4.

Particulars		Rs.
Selling price per unit	25	
Less: 4% trade discount	1	
Net sale price		24
Less: Variable cost:		
Direct Material cost	8	
Direct labour cost	5	
Variable overheads	3	16
Marginal Contribution		8

$$\text{P/V Ratio} = \frac{\text{Contribution}}{\text{Net Sale Price}} \times 100$$

3. What is Break-even point?
4. Explain the PV Ratio.
5. What is Break-even Chart?
6. Explain the concept of margin of safety.
7. What is angle of incidence?
8. How do you calculate cash break even point?
9. What is Profit-Volume graph?

B. Long Answers Questions

1. Explain the concept of marginal costing. What are the characteristics and assumptions of marginal costing?
2. What is meant by Break-Even-Analysis? Explain the assumptions and limitations of this technique.
3. What do you mean by cost-volume-profit relationship? How is it important in business management?

EXERCISES

- 1) The P/V ratio of Hansa Ltd., is 50% and margin of safety is 40%. You are required to work out the net profit and BEP if the sales volume is Rs. 10,00,000

[Ans: Rs. 6,00,000]

2. The following data relate to the cost records of ABC Ltd.

Year	Sales	Total Costs Rs.
2001	1,00,000	80,000
2002	1,20,000	90,000

Calculative P/V Ratio?

[Ans: 50%]

3. From the following information, calculate P/V Ratio and BEP?

Total Sales = Rs. 3,60,000, Fixed Cost = Rs. 1,00,000

Selling price per unit = Rs. 100, Variable cost per unit = Rs. 50.

[Ans: P/V Ratio = 50%, BEP = Rs. 2,00,000]

4. Estimate the volume of sales turnover to make a net profit of Rs. 10,000 from the following information:

Fixed Cost	- Rs. 13,000	Variable Cost	- Rs. 14,000
Total Cost	- Rs. 27,000	Net profit	- Rs. 3,000
Net Sales	- Rs. 30,000	P/V Ratio	- 53 $\frac{1}{3}$ %

[Ans: Sales Rs. 43,125]

- a) Break-Even sales for each plant; and
 b) Sales level where both the plants are equally profitable.

[Ans: (a) FAP - Rs. 10,000, SAP - Rs. 6,000 (b) FAP - 20,000 Bicycles (3) SAP - 21,000 Bicycles]

11. Kumar and Company Ltd. manufactures and sells four types of products under the brand names P, Q, R and S. The sales mix in value comprises $33\frac{1}{3}\%$, $41\frac{2}{3}\%$, $16\frac{2}{3}\%$ and $8\frac{1}{3}\%$ of products P, Q, R and S respectively. The total budgeted sales [100%] are Rs. 6,000 per month. Operating costs is:

Variable costs	Product
	P = 60% of the selling price
	Q = 68% of the selling price
	R = 80 of the selling price
	S = 40% of the selling price

Fixed cost Rs. 14,700 per month

Calculate the break -Even point for the products.

[Ans: Rs. 42,000]

12. The Sales turnover and profit during two years were as follows:

Year	Sales	Profit
2003	1,40,000	15,000
2004	1,60,000	20,000

You are required to calculate:

- i) P/V ratio
 ii) Sales required to earn a profit of Rs. 40,000
 iii) Profit when sales are Rs. 1,20,000.

[Ans: i) 25%; ii) Rs. 2,40,000; iii) Rs., 10,000]

11.9 FURTHER READINGS

1. Gupta, S.P. : **Management Accounting**, Sahitya Bhiawan Publication, Agra, 1999.
2. Jain, S.P. and Narang, K.L. : **Cost Accounting**, Kalyani Publishers, New Delhi, 1993.
3. Vinayakam, N. and Sinha, I.B. : **Management Accounting - Tools and Techniques**, Himalays Publishing House, Mumbai, 1998.
4. Made Gowda, J. : **Management Accounting**, Himalaya Publishing House, Mumbai, 2003.

UNIT - 12 : ALTERNATIVE DECISION CHOICES

Aims and Objectives

This unit aims at describing various alternative decision choices covering situations with two or more alternative courses of action from which the manager must select the best alternative.

After studying this unit, you should be able to :

- identify various alternative choices in decision making;
- analyze the theme of alternative decision choices; and
- solve the problems relating to decision making in the case of alternative choices.

Structure

- 12.0 Introduction
- 12.1 Pricing Decisions
- 12.2 Product and Production Decisions
- 12.3 Profit Planning
- 12.4 Level of Activity
- 12.5 Dropping a Product Line
- 12.6 Introducing a New Product or Line
- 12.7 Product/Sales Mix Decisions
- 12.8 Make or Buy Decision
- 12.9 Key/Limiting Factor
- 12.10 Summary
- 12.11 Model Answers to Activities
- 12.12 Self Assessment Questions
- 12.13 Further Readings
- 12.14 Key Words

12.0 INTRODUCTION

Decisions are the basic and creative tools of management. In the world of uncertainties, decision is the most creative event in the life of the business executive. Decision being an effort to choose the best from among the alternatives involves steps like defining the problem, identifying various alternatives, evaluating qualitative factors, obtaining additional information, selection of an alternative and appraisal of the results. Various cost studies and costing techniques, among other things, are useful to the management in this process. Cost studies bring out information required in the process of managerial decisions especially of facts relating to product and production decisions, price decisions, marketing and distribution decisions and decisions relating to inventory control. This unit explains how managerial decisions are taken in different situations.

- vi) Differential cost method
- vii) Standard cost method
- viii) Going rate pricing, and
- ix) Customary pricing

12.2 PRODUCT AND PRODUCTION DECISIONS

Production decision involves the decision on a particular product whether it should be produced or discontinued, if it is already being produced and marketed. The decision is guided by the contribution made by the sale of product at present, its future potential to gain penetration into the market and competition, product marketing cycle, available production capacity, product substitute, etc. Cost studies and cost analysis provide information on the level of contribution which guides the decision process.

Product line decision involves determining what different commodities should be produced, added or dropped, so that the company produces an economically balanced output which can yield the maximum contribution among the alternative plan of production. Adding a new product to the existing line depends upon the availability of surplus capacity. Hurried decision will cost heavily on the profit and other related matters. Some times it becomes necessary for a concern to introduce a new product to the existing product line. The additional product must be profitable. In order to decide about the profitability of the new product, it is assumed that the manufacture of the new product will not increase fixed costs of the concern and the price realized from the sale of such product is more than its variable cost. On the other hand, when a product line is decided to be discontinued, the following factors should be considered before such decision is taken:

- i) The contribution made by the product should be carefully considered rather than the total cost.
- ii) The capacity utilization level needs careful scrutiny. In case, the firm has idle capacity, the production of any product which can contribute towards the recovery of fixed cost can be justified.
- iii) The availability of a product to replace the product, which the firm contemplates to discontinue.
- iv) The long term prospects in the market for the product.
- v) The effect on the sale of other products must also be considered. In some cases the discontinuance of a product may result in heavy decline in the sales of other products affecting the overall profitability of the firm.

The decision on product development depends upon the available production capacity, demand potentiality, feature specification regarding design and many other similar factors. When all other physical facilities are available, the decision is guided by the profitability of the product through marginal cost analysis.

12.3 PROFIT PLANNING

Profit planning means planning for future operations in such a way to maximize the profit or to maintain a specified level of profit. Absorption costing fails to bring out the correct effect

Profitability statement if division 'Z' is closed

Particulars	X	Y	Z	Total Rs.
Sales	1,12,000	56,000		1,68,000
Less: Variable cost	33,500	21,000		54,500
Contribution	78,500	35,000		1,13,500
(-) Fixed costs				70,000
Profit				43,500

It is evident from the above that division Z contributes Rs. 20,000 towards fixed costs. If this division is discontinued, the total profit will be reduced by Rs. 20,000. As such closing down division Z will not be in the interest of the company.

Illustration - 2

A, B, C are three similar plants under the same management, who want them to be merged for better operation. The details are as under:

Plant	X	Y	Z
Capacity operated	100%	70%	50%
Turnover (Rs. in lakhs)	600	560	300
Variable cost (Rs. in lakhs)	400	420	150
Fixed cost (Rs. in lakhs)	140	100	124

Find out :

- i) the capacity of the merged plant to break even;
- ii) the profit at 75% capacity of the merged plant;
- iii) the turnover from the merged plant to give a profit of Rs. 56 lakhs.

Solution

Turnover and cost statement of three plants before and after merger are as follows:

Capacity (100%)	Plants			Merged Plant 100%
	A	B	C	(Rs. in lakhs)
	(Rs. in lakhs)			
Turnover	600	800	600	2,000
Less: Variable cost	400	600	300	1,300
Contribution	200	200	300	700
(-) Fixed cost	140	100	124	364
Profit	60	100	176	436

Activity - 1

A multi product company has the following cost and output data for the last year.

	Product		
	X	Y	Z
Sales mix	40%	35%	25%
	Rs.	Rs.	Rs.
Selling price	20	25	30
Total variable cost per unit	10	15	18
Total fixed cost			1,50,000
Total sales			5,00,000

The company proposes to replace product Z by product S. Estimated cost and output data are:

	X	Y	S
Sales	50%	30%	20%
	Rs.	Rs.	Rs.
Selling price	20	25	28
Variable cost / Unit	10	15	14
Total fixed cost			1,50,000
Total sales			5,00,000

Analyse the proposed change and suggest what decision the company should take.

12.4 LEVEL OF ACTIVITY

Marginal costing may be of great help to the management in planning the level of activity. Maximum contributing at a particular level of activity will show the position of maximum profitability. The optimum level of activity can be determined through marginal costing principles. The contribution at different levels of activities should be calculated. The level of activity which gives the highest contribution is called optimum level of activity.

Management is often faced with a problem of determining the optimum or most profitable level of operation or activity. Level of activity is expanded or contracted that level of activity which promises maximum profit. Marginal costing technique helps in choosing such level of activity. It also implies that the level of activity can be expanded upto that level, where sales exceed marginal costs.

Solution

Statement of Marginal Costs of Additional 40000 Units

	60000 units Rs.	100000 units Rs.	40000 units Rs.
Cost upto first process	12,00,000	24,00,000	12,00,000
Cost in subsequent process:			
Material	3,00,000	5,00,000	2,00,000
Labour	3,00,000	5,00,000	2,00,000
Variable overheads	1,80,000	3,00,000	1,20,000
Marginal Cost	19,80,000	37,00,000	17,20,000
Sales	30,00,000	50,00,000	20,00,000
Contribution	10,20,000	13,00,000	28,00,000
Less fixed cost (Subsequent Process)	6,00,000	6,00,000	--
Profit	4,20,000	7,00,000	2,80,000

Working Notes

Due to restricted supply of raw materials, activity cannot be increased beyond first process. To remove this bottleneck goods completed at first stage can be purchased from market at Rs. 30 per unit. Thus, cost of first process at 100000 units will be:

60000 units @ Rs. 20	Rs. 12,00,000
40000 units @ Rs. 30	Rs. 12,00,000
Total	Rs. 24,00,000

At first it appears that level of activities show not be increased because purchase price (Rs. 30) plus cost subsequent process exceed the selling price. But the above statement justifies increase in activity because it will increase the present profit by Rs. 28,00,000 because fixed expenses in subsequent process will remain constant, whether activity is increased or not. Hence, it is recommended that the level of activity shown increased as it is profitable and worthwhile.

Activity - 2

Following is the cost structure of Teltronix Corporation, Trivandrum, Manufacture Colour TVs.

	Level of Activity		
	50%	70%	90%
Output (in Units)	200	280	360
Cost (in Rs.) Materials	10,00,000	14,00,000	18,00,000
Labour	3,00,000	4,20,000	5,40,000
Factory Overheads	5,00,000	6,00,000	7,00,000
Factory Cost.	18,00,000	24,00,000	30,40,000

The production manager wants to discontinue one line and guarantees that production of others two lines shall rise by 50%. He wants to discontinue line 'X' as it is least profitable.

- A. Do you agree to the scheme in principle?
 B. If yes, do you think that line 'X' should be discontinued.

Solution

Working Note

i) Total fixed costs will be

X	$4000 \times 5 = 20,000$
Y	$2000 \times 8 = 16,000$
Z	$5000 \times 9 = 45,000$
	81,000

It will be assumed that dropping one line will not reduce total fixed costs and released facilities will be used in the product/expansion of other two products.

	X	Y	Z
Materials	18	26	30
Labour	7	9	10
Overheads (Variable)	2	3	3
Marginal Cost	27	38	43
Selling Price	40	60	61
Contribution	13	22	18
Contribution Ratio	32.5%	36.7%	29.5%

Now let us consider the alternative arrangements.

1. All lines are continued (i.e., present position):

Lines	Sales	Marginal Costs	Contribution
X	1,60,000	1,08,000	52,000
Y	1,20,000	76,000	44,000
Z	3,05,000	2,15,000	90,000
Total	5,85,000	3,99,000	1,86,000
(-) Fixed costs			81,000
Profit			1,05,000

Illustration - 6

Geetha Ltd. is now manufacturing 5000 units of 'X', 4000 units of 'Y' and 3000 units of 'Z'. The details per unit are:

	Products		
	X	Y	Z
Selling price	80	50	40
Costs:			
Materials	30	25	20
Labour	10	8	6
Variable overheads	4	3	2
Fixed overheads	10	8	7
Scarce material consumed (per unit in Kg.)	10	6	4

Sales is not limiting factor with respect to any of the products. It is decided to close one of the line. Will it be advisable? If yes, which line should be closed?

Solution

Statement of Marginal Costs and Contribution

	Products		
	X	Y	Z
Selling price	80	50	40
Marginal Costs:			
Materials	30	25	20
Labour	10	8	6
Variable overheads	4	3	2
Marginal costs	44	36	28
Contribution	36	14	12

Contribution per Kg. of materials

$$36/10=3.60 \quad 14/6=2.33 \quad 12/4=3.00$$

Recommendation

It will be seen that contribution per kg. of material is that lowest in the case of product 'Y'. It implies that material can be used in a more profitable way in manufacturing X and Z. For example, 6 kg. of materials used in the production of 'Y' will yield Rs. 21.60 as contribution if it is switched over to the production of 'X' and Rs. 18.00 if used in the production of Z. Thus, if sales is not limiting factor and existing units of 'X' and 'Z' along with increased units due to utilization of 24000 kg. of material to be released from the production of 'Y' can be sold conveniently, it is suggested that the production of 'Y' product should be closed down.

Recommendation

It may be recommended that the sales manager's proposal should be carried out, because it will increase the amount of profit from Rs. 50,000 to Rs. 51,000.

Working Note

Total fixed costs are ascertained as under:

	Last Year	
	Sales	Contribution
P	4,00,000	80,000 (20%)
Q	3,00,000	30,000 (10%)
R	1,80,000	90,000 (50%)
Total Contribution		2,00,000

Profit of last year = Rs. 50,000

Hence, fixed costs = 2,00,000 - 50,000 = Rs. 1,50,000

Let Marginal cost = 100 - Contribution Ratio

P = 100 - 20 = 80%; Q = 100 - 90% = 10%; R = 100 - 50 = 50%.

Activity - 4

M company limited manufactures three products A, B and C. The directors of the company are worried about the profits of the organization and propose to discontinue product 'A' which is incurring losses. The following information is available regarding the products A, B and C:

Particulars	A	B	C
Sales (Units)	2000	5000	12000
Price per unit (Rs.)	5	4	2.5
Direct materials per unit (Rs.)	1.50	0.60	0.75
Direct labour per unit (Rs.)	1.00	0.60	0.25
Variable overhead (% of direct labour)	300	200	300
Direct fixed cost per unit (Rs.)	0.50	0.50	0.375
Profit/Loss (Rs.)	-3,000	3,500	1,500
Fixed Cost - Rs. 6,000			

Fixed costs are apportioned to the products A, B and C in the ratio of 1:2:3 respectively. What suggestions would you give if you find that direct fixed costs are directly involved with each product line and that they would be avoided if a particular product line is dropped?

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It is expected that 2000 units of the new products can be sold at a price of Rs. 60 per unit. The fixed factory overheads are expected to increase by 10%, while fixed selling and distribution expenses will go up by Rs. 12,500 annually. Administration overheads remain unchanged. However, there will be an increase of working capital to the extent of Rs. 75,000. Which would take total product cost to Rs. 8.75 lakhs.

The company considers that 20% pre tax and interest return on investment & the minimum acceptable to justify any new investment required.

- i) Should the new product be introduced?
- ii) Given the data and making any assumptions that you consider appropriate, are there any further observations or recommendations you wish to make?

Solution

Working Notes

- 1) Computation of profit on existing and new products:

Particulars.	Existing Product		New Product		Total Amount
	Amount	Per Unit	Amount	Per Unit	
Sales quantity (units)	6000		2000		
Sales value (A)	5,40,000	90	1,20,000	6.00	6,60,000
Variable Costs:					
Direct materials	96,000	16	32,000	16.00	
Direct labour	1,20,000	20	30,000	15.00	
Direct expenses	18,000	3	3,000	1.50	
Variable overheads [WN(2)]	30,000	5	7,000	3.50	
Total variable cost (B)	2,64,000	44	72,000	36.00	3,36,000
Contribution: (A) - (B) = (C)	2,76,000	46	48,000	24.00	3,24,000
Factory overheads:					
Factory	1,75,000		17,500		
Administration	21,000		--		
Selling and distribution	20,000		12,500		
Total fixed cost (D)	2,16,000	36	30,000	15	2,46,000
Profit (C) - (D)	60,000	10	18,000	9	78,000

2) Variable Overheads	Rs.
Factory: 12.5% of Rs. 2,00,000	25,000
Selling and distribution: 20% of Rs. 25,000	5,000
Total	<u>30,000</u>

Illustration - 9

GMR Ltd. produces a product 'G'. Present level of production is 20,000 units as against installed capacity of 30,000 units. The present cost structure is as under:

Material - Rs. 2,00,000; Labour - Rs. 1,00,000

Variable overheads - Rs. 20,000; Fixed overheads - Rs. 1,50,000

Fixed overheads include Rs. 40,000 for depreciation. Product 'X' is sold at Rs. 30 per unit. It is proposed to manufacture product 'Y' along with product 'X'. The installed capacity of product 'Y' will be 15,000 units. This will require Rs. 2,50,000 additional investments over and over and above the existing Rs. 5,00,000 investments. At the start 10000 units of Y are to be manufactured and sold. These can be sold at Rs. 20 each. Rs. 15,000 overheads (as fixed) apart from 10% depreciation on machinery will be needed. Out of the new investment Rs.50,000 will be required for working capital.

The cost estimates for product Y are: material Rs. 10 per unit, labour Rs. 3 per unit and variable overheads Rs. 1 per unit. Is it advisable to introduce product Y?

Solution

Statement of Profitability of Each Product

	Existing Product X	New Product Y	Total
Sales	6,00,000	2,00,000	8,00,000
(-) Marginal Costs			
Materials	2,00,000	1,00,000	3,00,000
Labour	1,00,000	30,000	1,30,000
Variable overheads	20,000	10,000	30,000
Marginal Cost	3,20,000	1,40,000	4,60,000
Contribution	2,80,000	60,000	3,40,000
(-) Fixed overheads	1,50,000	35,000	1,85,000
Net Profit	1,30,000	25,000	1,55,000
Contribution percentage	46.7%	30%	42.5%
Net Profit on Capital Investment	26%	10%	20.7%

Recommendation

It is suggested that introduction of product 'Y' will not improve the profitability, though total profit will increase from Rs. 1,30,000 to Rs. 1,55,000. Both contribution percentage and return on investments are lower in the case product Y. It would be a better proposition to increase the production of existing product 'X' rather than introducing the new product 'Y'.

Illustration - 10

Kalyan Ltd. is at present dumping its waste materials in a near by pond at a cost of Rs.0.75 per tonne. It is proposed to operate a new department which will use the above waste materials and produce 3 articles X, Y and Z. These articles will be sold at Rs.3.75, Rs.3.75 and

Illustration - 11

Ltd. has specialized in the manufacturer of a particular type of transistors. Recently, it has developed a new model and is confident of selling all the 8000 units [new product] that would be manufactured in a year. The required equipment would cost Rs.25 lakhs and that would have an economic life of 4 years with no significant salvage value at the end of such period.

During the first 4 years, the promotional expenses would be as planned below;

Year	1	2	3	4
Expenses [Rs.]:				
Advertisement	100000	75000	60000	30000
Other	50000	75000	90000	120000

Variable costs of producing and selling a unit would be Rs.250. Additional fixed operating cost to be incurred because of this new product is budgeted at Rs. 75000 per year. The management expects a discounted return of 15% [after tax] on investments in the new product.

You are required to work out an initial selling price per unit of the new product that may be fixed with a view to obtaining the desired return on investment. Assume a tax rate of 40% and use of straight line of depreciation for tax purpose.

Note: The present value of annuity of Re.1 received or paid in a steady stream through out the period of 4 years in the future at 15% is 3.0079.

Solution

Working Note

Computation of total annual costs of 8000 units

Variable costs [8000 units × Rs.250]	20,00,000
Advertisement expenses plus other expenses	1,50,000
Additional fixed operating costs	75000
Annual cash costs	22,25,000
Add: Depreciation [25,00,000/4]	6,25,000
Annual Total Costs	28,50,000

Computation of initial selling price

Let the desired initial selling price per unit be	Rs. 'X'
Total sales value	8000 'X'
Profit for taxation purpose = Sales - Total cost	= 8000X - 28,50,000
Tax @ 40% on profit = 40% × Profit	= 40%[8000X - 28,50,000]
	= 3200X - 11,40,000
Total Annual cash out flow	= Cash cost + Tax
	= 2225000 + [3200X - 11,40,000]
	= 22,25,000 + 3200X + 11,40,000

	Product A	Product B
Direct materials [per unit]	10	9
Direct wages [per unit]	3	2
Sales [per unit]	20	15
Fixed expenses Rs.800.		

[Variable expenses are allocated to products as 100% of direct wages]

Sales mixtures:

- 100 units of product A and 200 of B
- 150 units of product A and 150 of B
- 200 units of product A and 100 of B

Recommend which of the sales mixtures should be adopted.

Solution

i)

	Product A		Product B	
		Per unit Rs.		Per unit Rs.
Sales price		20		15
Less: Variable cost:				
Direct material	10		9	
Direct wages	3		2	
Variable overheads	3	16	2	13
Contribution		4		2

ii)

	Mix (a)			Mix (b)			Mix (c)		
	A	B	Total	A	B	Total	A	B	Total
Sales (units)	100	200	300	150	150	300	200	100	300
Contribution	4	2		4	2		4	2	
Total Contribution	400	400	800	600	300	900	800	200	1000
Less: Fixed Cost			800			800			800
Profit			--			100			200

Mix (c) can be adopted as it gives the maximum contribution and profit.

	Mix-1	Mix-2	Mix-3
A	18000	15000	22000
B	12000	6000	8000
C	7000	13000	8000

As a cost accountant what mix will you recommend?

Solution

Product	No. of units	Weights	Total equivalent unit	Total variable cost	Variable cost per unit	Selling price per unit	Contribution
A	15000	1	15000	66,000	4.40	6.25	1.85
B	10000	1.5	15000	66,000	6.60	7.25	0.90
C	10000	1.75	17500	77,000	7.70	10.50	2.80
			47500	2,09,000			

	Mix-1	Mix-2	Mix-3
A	18000 × Rs.1.85 = 33300	15000 × Rs.1.85 = 27750	22000 × 1.85 = 40700
B	12000 × Rs.0.90 = 10800	6000 × 0.90 = 5400	8000 × 0.90 = 7200
C	7000 × Rs.2.80 = 19600	13000 × 2.80 = 36400	8000 × 2.80 = 22400
	63700	69550	70300
[−] fixed cost [35000 × 2]	= 70,000	= 70,000	= 70,000
Profit/Loss	[6300]	[450]	+ 300

The Product Mix-3 earns a profit and hence is recommended.

Illustration - 14

A small tools factory has a plant capacity adequate to provide 19800 hours of machine use. The plant can produce all 'A' type tools or all 'B' type tools or mixture of the two types. The following information is available / relevant:

Per type	A	B
Selling price [Rs]	10	15
Variable Cost [Rs.]	8	12
Hours required to produce	3	4

Market conditions are such that not more than 4000 A type tools and 3000 'B' type tools can be sold in a year. Annual fixed costs are Rs.9900. Compute the product mix that will maximize the net income to the company and find that maximum net income.

Fixed	6,000	2,100	1,800	2,100
	2,70,000	37,200	2,01,900	30,900
Profit/Loss	30,000	7,800	23,100	(-) 900

On the basis of the above the Board had almost decided to eliminate product 'C' on which a loss was budgeted. Meanwhile they have sought your opinion. What would you advise? Give reasons for your answer.

Solution

Particulars	Product			Total Rs.
	A	B	C	
Sales A	45,000	2,25,000	30,000	3,00,000
Less: Variable cost				
Production cost	24,000	1,44,000	12,000	1,80,000
Selling & Administrative cost	8,100	8,100	7,800	24,000
Total variable cost (B)	32,100	1,52,100	19,800	2,04,000
Contribution (A - B)	12,900	72,900	10,200	96,000
Less: Fixed cost				66,000
Profit				30,000

From the above it is clear that product 'C' contributes Rs. 10,200 towards the fixed expenses of the company. If product is eliminated the profit of the company will be reduced to Rs. 19,800. Hence it is not advisable to eliminate product C.

Activity - 5

ABC Ltd. which produces three products, furnishes the following data for the year 2004.

Products	Alfa	Beta	Gama
Selling price per unit [Rs.]	100	75	50
Profit/Volume Ratio	10%	20%	40%
Maximum sales Potential [Units]	40000	25000	10000
Raw material as % of variable cost	50%	50%	50%

The company uses the same raw material for all the three products. Raw material is in short supply and the company has a quota for supply of raw material of the value of Rs. 18,00,000 for the year 2004 for manufacture of its products to meet its sales. Total fixed costs is Rs. 6,80,000. You are required to.

Solution

a. Relevant cost sheet based on variable costs:

	Per units amount [Rs.]
Materials	Rs.2.75
Labour	Rs.1.75
Other variables	Rs.0.50
Total variables	<u>Rs.5.00</u>
Market price	<u>Rs.5.75</u>

Decision : It is profitable to make the component, as it yields cost savings of Rs.0.75 per unit.

b). New Data: Variable cost of making	Rs.5.00
Market price	Rs.4.85

Decision : It is advised to buy the component because it saves Rs.0.15 per component.

Activity - 6

A firm is producing 15000 units of an intermediate product 'A' at an average cost of Rs.40 per unit including fixed cost of Rs.1,50,000. 1/3 of fixed cost is avoidable. Instead of producing, the firm can buy it from outside at Rs.32 per unit. Should the firm produce 'A' or buy it from outside? Show complete workings.

Illustration - 17

Ram Well Cycles Ltd. purchased 20000 bells per annum from an outside supplier at Rs.5 each. The management feels that these be manufactured and not purchased. A machine costing Rs.50,000 will be required to manufacture the item within the factory. The machine has an annual capacity of 30,000 units and life of 5 years. The following additional information is available.

Material cost per bell will be	Rs.2.00
Labour cost	Rs.1.00
Variable overheads	100% of labour cost

You are required to advise whether :

- The company should continue to purchase the bells from outside supplier or should make them in the factory; and
- The company should accept an order to supply 5,000 bells to the market at a selling price of Rs.4.50 per unit.

machines each of which can make any of the three components. However the total capacity of the three machines is only 12,000 machine-hours per month and is just sufficient to meet the current demand. Labour for assembling is available according to requirements. Further details are given below.

Components	Machine hours required per unit	Variable cost per unit	Market price at which the component can be purchased, if required
A	4	Rs.48	Rs. 64
B	5	Rs.60	Rs. 75
C	6	Rs.80	Rs.110
Assembling	—	30 [per unit of Z]	—

Fixed costs per month amount to Rs.50,000. Product 'Z' is sold at Rs.300 per unit.

From next month onwards the company expects the demand for 'Z' to rise by 25%. As the machine capacity is limited, the company wants to meet the increase in demand by buying such numbers of A, B or C which is most profitable.

You are asked to find out the following:

- Current demand and profit made by the company
- Which component and how many units of the same should be bought from the market to meet the increase in demand?
- Profit made by the company if suggestion in [b] is accepted.

Solution

- Computation of Current Demand and Profit made by the Company

Total machine hours required per unit of Z = 15 hours
 Total machine hours available = 12000 hours
 Maximum production of product 'Z' = $12000/15$
 = 800 units

Statement of Current Profit from Product Z

Particulars	Amount Rs.
Selling price per unit	300
Less: variable cost including assembling [per unit]	218
Contribution per unit	<u>82</u>
Total contribution from 800 units @Rs.82 per unit	65,600
Less : Fixed cost	<u>50,000</u>
Current net Profit	<u>15,600</u>

Component B (400 × Rs. 60)	24,000
Cost of Buying	
Component B (600 × Rs. 75)	45,000
Assembling of Z (1000 × Rs. 30)	30,000
Total Variable Cost (B)	<u>2,27,000</u>
Contribution (A - B)	73,000
Less: Fixed Cost	<u>50,000</u>
Net Profit	<u>23,000</u>

12.9 KEY / LIMITING FACTOR

A key factor is that factor which puts a limit on production and profit of a business. Usually the limiting factor is sales. A concern may not be able to sell as much as it can produce. But sometimes a concern can sell all its produces but production is limited due to the shortage of materials, labour, plant capacity, or capital. In such a case, a decision has to be taken regarding the choice of the product, whose production is to be increased, reduced or stopped. Ordinarily, when there is no limiting factor, the choice of the product will be on the basis of the highest P/V ratio. But when there are scarce or limited resources, selection of the product will be on the basis of contribution per unit of scarce factor of production. In short, scarce resources should be utilized in those directions where contribution per unit of limited resources is the maximum.

For example, materials are limited in supply and products X and Y use the same materials. Three units of materials are used for producing product X and five for Y. Suppose, further contribution per unit is Rs.12 in case of product X and Rs.15 in case of product Y. In this case contribution per unit of materials is Rs.4 of product X. Rs.4 [i.e., Rs.12/3] and Rs.3 in case product Y [Rs.15/5]. Hence the available material should first be used for manufacturing product X upto limit of demand for it and the balance of materials should be used for Y because product X yields more contribution per unit of scarce resource i.e., materials.

A limiting factor or key factor restricts the company from earning profit. The limiting factors may be raw material, labour, electricity, finance, capacity of plant and sales. When a company is facing any of the limiting factors, the contribution per unit of the limiting factor should be the criterion to assess the profitability. The product which gives the highest contribution per unit of the limiting factor should be preferred. If the limiting factors are more than one then all of them should be analyzed.

By applying the marginal costing technique the profitability of a product or process is always measured with reference to its contribution. This is based on the assumption that the manufacture of the product can be increased to any extent with the consequent increase in the contribution offered. This assumption has no practical significance especially in the context of the management diversifying the products to meet the varying demands of the existing market and confronted with a variety of factors which act as impediments. Such a factor which has got a bearing on the profitability is called "Key Factor" or "Limiting Factor" or "Governing Factor" or "Scarce Factor" or "Principal Budget Factor". The management must ascertain the extent of the influence or impact of this factor for ensuring maximization of profit.

details will reveal the loss to the company through purchase of components from outside.

	Rs
A	20
C	30
B	75
D	76

Thus, it is clear from the above statement that 'A' may be purchased from outside if needed, and if still own production could not be effected, C should be purchased.

The profitability statement clearly shows that from the point of view of loss (or decline of profit) per machine hour if the components are purchased from outside, the ranking of four components would be A,C,B and D.

Illustration - 20

The following particulars are extracted from the records of a company:

	Per unit	
	Product A	Product B
Sale price [Rs]	200	220
Consumption of materials [kg]	10	8
Materials cost [Rs]	48	28
Direct wages [Rs]	4	6
Machine hours used	4	6
Variable overheads	8	12

Comment on the profitability of each product [both used the same raw material] when:

- total sales potential in units is limited
- total sales potential in value is limited
- Raw material is in short supply
- production capacity [in terms of machine hour] is the limiting factor.

Solution

	Per unit	
	Product A	Product B
Sale Price	200	220
Less: Variable Cost	60	23
Contribution	140	174

business undertakings aim at maximizing their values to their owners. The decisions which the management has to take should ensure both the minimization of cost and the maximization of profit. Decision making process has been defined as the process of selecting the best alternative out of number of possible alternatives available. The decision making process is, therefore, reckoned as the most significant one as the very survival of the business entity depends upon these managerial decisions. The use of the phrase best alternative in the definition implies that the alternative must ensure the best result to the company. The decisions have a number of implications on the determinants of profit, performance and the like. It is necessary to have a comprehensive evaluation of each of the possible alternatives so that the management selects the best alternative and takes the final decision. Prices are generally determined by market conditions and other economic factors. Yet, in some cases, marginal costing technique assists the management in the fixation of selling price and the change in the sales price. Variable cost and product mix affect the profitability of a concern. Make or Buy decision is based upon the assumptions that fixed expenses do not increase and production facilities can be employed more profitably. A limiting factor is a factor which limits or restricts production or sales. By this management has to decide how they use scarce resources. Management should also have to decide on the basis of contribution either to drop a product or to introduce a new product, etc.

12.11 MODEL ANSWERS TO ACTIVITIES

1. I. Present

	X	Y	Z	Total Rs.
Selling Price	20	25	30	
Less: Variable Cost	10	15	18	
Contribution (Rs.)	10	10	12	
P/V Ratio	50%	40%	40%	
Sales Mix	40%	35%	25%	100%
Contribution per Rupee of Sales (P/V ratio × Sales mix)	20%	14%	10%	44%
Sales (Rs.)				5,00,000
Total Contribution				2,20,000
(-) Fixed Cost				1,50,000
Profit				70,000

$$\text{Break-even point} = \frac{\text{Fixed Cost}}{\text{P/V Ratio}}$$

(P/V Ratio = Total contribution per rupee of sales)

$$= \frac{1,50,000}{44\%}$$

$$= \text{Rs. } 3,40,909.$$

3.

Statement of Marginal Cost and Contribution

	A Rs.	B Rs.	C Rs.
Selling price per unit	68	58	64
Margin cost:			
Material	10	6	8
Labour	12	12	12
Variable overhead:			
Dept. P (1.20 of direct labour)	9.60	2.40	2.40
Dept. Q (0.40 of direct labour)	0.80	3.20	0.80
Dept. R (1.00 of direct labour)	2.00	2.00	8.00
	34.40	25.60	31.20
Contribution	33.60	32.40	32.80
Contribution Ratio	49.41%	55.85%	51.25%

Product B is most profitable, and as such it should not be discontinued. Management should explore the possibility of increasing the production of Line B because this step will increase in total profit of the company due to better P/V Ratio of product B. If product B is dropped, its share of fixed costs will be borne by product 'A' and 'C' and thus the total profit will be reduced.

4.

Comparative Income Statement

Particulars	Products [Rs.]			Total
	A	B	C	
Direct Materials costs	1.50	0.60	0.75	
Direct Labour Cost	1.00	1.60	0.25	
Variable over-head expenses [300%, 200%, and 300% of direct labour]	3.00	1.20	0.75	
Variable cost per unit.	5.50	2.40	1.75	
Unit selling price	5.00	4.00	2.50	
Unit contribution	(-) 0.50	-1.60	0.75	
Sales volume [Units]	2000	5000	12000	19000
Total Contribution [a]	(-) 1000	8000	9000	16000
Direct fixed cost per unit [Rs.]	0.50	0.50	0.375	
Total direct fixed costs [b]	1,000	2,500	4,500	8,000
Contribution towards common fixed cost [a-b]	(-) 2,000	5,500	4,500	8,000

b. Computation of maximum profit:

Contribution:

Product Gamma : [10,000 units × Rs. 20]	2,00,000
Product Beta : [25,000 units × Rs. 15]	3,75,000
Product Alfa : [20,000 units × Rs. 10]	2,00,000
Total Contribution	<u>7,75,000</u>
Less: Fixed Cost	6,80,000
Profit	<u>95,000</u>

6. Computation of total cost of 15,000 units when 'A' is produced.

Particulars	Rs.
A. Fixed cost	1,50,000
B. Variable cost [(15,000 units x Rs. 40) - Rs. 1,50,000]	<u>4,50,000</u>
Total Cost : (A + B)	<u>6,00,000</u>

Computation of total cost of 15000 units when 'A' is bought from outside:

Particulars	Rs.
A. Purchase price (15000 units x Rs. 32)	4,80,000
B. Unavoidable fixed cost (2/3 x Rs. 1,50,000)	<u>1,00,000</u>
Total Cost (A + B)	<u>5,80,000</u>

Recommendation

From the above it is clear that when product 'A' is purchased from outside, there is a reduction of Rs. 20,000 in the total cost of 15,000 units. Hence, it is advisable to buy product 'A' from outside.

7.

	Product X Cost per unit	Product Y Cost per unit
Selling price [a]	75	105
Variable cost: Material	30	50
Labour	10	20
[b]	40	70
Contribution per unit [a-b] [Sales - variable cost]	35	35
Contribution per 1 kg of materials	35/3=11.6 or 12	35/5=7

Through product 'Y' gives more contribution per unit, product 'X' is more profitable as per the material as key factor.

This is based on the manufacture of one lakh cycles per annum. The company expects that due to competition they will have to reduce selling prices, but they want to keep the total profit intact. What level of production will have to be reached, i.e., how many cycles will have to be made to get the same amount of profit.

- a. The selling price is reduced to 10%
- b. The selling price is reduced by 20%

[Answers: [a] 1,25,000 Cycles [b] 1,66,667 Cycles]

Hints

1. New selling price = selling price - Reduction of percentage
2. Desired sales = $\frac{\text{Fixed cost} + \text{profit}}{\text{P/V Ratio}}$
2. A manufacturing company finds that while the cost of making a component No. 051 in its own workshop is Rs. 800 each, the same is available in market at Rs. 6.50 with an assurance of continuous supply. (a) Give your suggestion whether to make or buy this component. (b) Give also your views in case the supplier reduced the price from Rs. 6.50 to Rs. 5.50. The cost data is as follows:

Marginal cost component 0.51 per unit	Rs.
Materials	3.00
Direct Labour	2.00
Other variable expenses	1.00
Depreciation and other fixed expenses	2.00
	8.00

[Answer: Marginal Cost of Component 0.51 [per unit] = 6.00

- a) It is advisable to buy the component from outside than to make it.
- b) It is advisable to buy the component from outside]
3. In a factory producing two different kinds of articles, the limiting factor is the availability of labour. From the following information, show which product is more profitable:

	Product A cost per unit	Product B cost per unit
	Rs.	Rs.
Materials	5.00	5.00
Labour 6 hours @ Rs. 0.50	3.00	1.50
3 hours @ Rs. 0.50		
Overhead: Fixed -0% of labour	1.50	0.75
Variable	1.50	1.50
	11.00	8.75
Selling Price	4.00	11.00
Profit	7.00	2.25
Total production for the month	500	600

If it is decided to work the factory at 50% capacity, the selling price falls by 3%. At 90% capacity, the selling price falls by 5% accompanied by a similar fall in the prices of materials.

You are required to calculate the profit at 50% and 90% capacities and also calculate BEPs for the capacity productions.

[Answer: Profit at 50% Capacity = Rs. 25,000, Profit at 90% Capacity = Rs. 71,250

BEP at 50% Capacity = 6818 units, BEP at 90% Capacity = 6667 units]

6. A plant is capable of operating for 6000 machine hours inter changeably for any one of three products viz., A, B and C. From the following data, recommend:

a. Selling prices which would yield a 20% profit on the selling prices; and

b. Selling prices which would yield 20% return on capital employed.

Product	No. of units per machine hour	Material cost per unit
A	3	2
B	2	3
C	1	4

i) Labour cost per machine hour Rs. 2

ii) Variable overhead per unit Rs. 3

iii) Fixed cost Rs. 15,000

iv) Total capital employed Rs. 60,000

[Answers: (a) Product A=5.625, B=8.4375, C=14.375 (b) Product A=Rs.5.17, B=7.75, C= Rs.13.50].

12.13 FURTHER READINGS

- Gupta, S.P. : **Management Accounting**, Sahitya Bhawan Publication, Agra, 1999.
- Jain, S.P and Narang, K.L. : **Cost Accounting**, Kalyani Publishers, New Delhi, 1993.
- Sazena, V.K. and Vashist, C.D. : **Advanced Cost and Management Accounting**, Sulthan Publishers, New Delhi, 1999.
- Vinayakam, N, and Sinha, I.B. : **Management Accounting - Tools and Techniques**, Himalays Publishing House, Mumbai, 1998.
- Made Gowda, J. : **Management Accounting**, Himalaya Publishing House, Mumbai, 2003.
- Sharma, R.K. and Shashi, K. Gupta : **Management Accounting**, Kalyani Publishers, Hyderabad, 1991.

UNIT - 13 : RESPONSIBILITY ACCOUNTING

Aims And Objectives

The aim of this unit is to explain the concept of responsibility accounting, responsibility centers and the process of preparation of responsibility reports.

After studying this unit, you should be able to:

- explain the meaning and significance of responsibility accounting;
- explain the essential features of responsibility accounting;
- describe the steps involved in responsibility accounting;
- define the responsibility centers; and
- prepare responsibility accounting reports.

Structure

- 13.0 Introduction
- 13.1 Meaning of Responsibility Accounting
- 13.2 Essential features of Responsibility Accounting
- 13.3 Steps Involved in Responsibility Accounting
- 13.4 Concept and Types of Responsibility Centers
- 13.5 Significance of Responsibility Accounting
- 13.6 Preparation of Responsibility Accounting Reports
- 13.7 Summary
- 13.8 Model Answers to Activities
- 13.9 Self Assessment Questions
- 13.10 Further Readings
- 13.11 Key Words

13.0 INTRODUCTION

In previous units you have learnt about the ways and means of controlling material resources. In this unit you will learn how to relate executive responsibility of various levels of organization with that of accounting system, which is more significant than controlling material resources.

Managerial control, which one of the fundamental functions of management accounting, lies in establishing standards of performance, measurement of actual performance, identifying deviations and rectifying the deviations. Responsibility Accounting is one of the tools developed recently in this regard. It believes that the performance of an organization primarily rests on human resources and their effective performance at various centers of responsibility or decision authority than material resources. Responsibility accounting is the basic foundation stone of managerial control. It measures the performance of each decision authority, after dividing the responsibilities of an organization among various decision authorities, and its contribution in total

13.2 ESSENTIAL FEATURES OF RESPONSIBILITY ACCOUNTING

From the above definitions the following essential features of responsibility accounting can be observed:

i) Responsibilities are stated in terms of inputs and outputs or costs and revenues

One of the fundamental features of Responsibility Accounting is that every responsibility is defined in terms of inputs and outputs or costs and revenues. Physical units of raw material to be used and labor hours to be consumed in performing the responsibility are known as inputs. Costs are calculated multiplying the inputs with their monetary values known as prices. Results achieved are known as outputs. If they are expressed in monetary terms, they are known as revenues. Thus costs and revenues information is the basis for Responsibility Accounting.

ii) Use of Budgeting

Responsibility accounting makes use of budgeting. Prior to the defined period of time the responsibilities of every responsibility head have to be defined and expressed in terms of inputs, costs, outputs and revenues. Further, the actual performance of each responsibility head has to be measured and compared with the budgeted figures so as to take effective steps for minimizing the gaps.

iii) Identification of Responsibility Centers

The use of responsibility accounting is possible only when organization is divided into responsibility centers. Responsibility center is a sub unit of an organization representing a sphere of authority or decision point in the form of segment, department or division. It is under the control of an individual, who is responsible for the control of the activities of that sub division. While dividing organization into responsibility centers there is no bar about the size of the sub unit. It may be a small sub unit comprising one machine or it may be a big division of an organization. The general guideline for identifying a sub unit as responsibility center is that it should be separable and identifiable for its operating purposes and for its performance measurement and evaluation. Responsibility centers are classified as cost center, revenue center, profit center and investment center.

iv) Presence of Suitable organization structure and responsibility accounting system

Sound organization structure with clearly defined authority and responsibility is essential prerequisite for effective use of Responsibility Accounting. In the same way suitable and cautiously designed responsibility accounting system to suit the needs of the organization structure is also equally essential. Unless both are taken care of properly it is not possible to reap the benefits of responsibility accounting. The prime aim of responsibility accounting is to ascertain the performance of every head of responsibility center. It is possible only when the sphere of authority and responsibility of every responsibility head is clearly defined and the responsibility accounting system has capability to measure the performance of various responsibility heads accurately throughout the organization and enable the management to control the activities. Hence both need adequate planning.

controlling the affairs. To be effective the report should be clear and simple and show information about the budgeted figures, actual figures, variances that are controllable and also non controllable. A specimen of performance report is given below:

PERFORMANCE REPORT

Department	Month ending		
Costs	Actual Rs.	Budgeted Rs.	Variance Rs.
Controllable Costs			
Direct material			
Direct labour			
Direct expenses			

Allocated unit Uncontrollable Costs			
Depreciation			
Rent			
Insurance			

Total Cost			

viii) Participative Management

As discussed earlier responsibility accounting needs division of organization into responsibility centers, defining authority relations, assigning particular costs and revenues to persons responsible for each responsibility center, measuring their performance and reporting properly to the right authority for controlling the affairs. This entire process will be effective only when responsibility heads satisfy with justification done in assigning particular costs, revenues, delegating authority, etc. This is possible with the presence of participative or democratic management in the organization. If plans and budgets/standards are prepared and responsibilities are assigned with the consultation of subordinates, it motivates the employees by ensuring their participation and self imposed goals.

ix) Human Aspect of Responsibility Accounting

The prime purpose of Responsibility Accounting is to supervise the executive performance and attain the intended goals but not to punish the employees. This should be made clear to all the employees particularly to the responsibility heads, It should be taken as a device to improve executive performance but not for punishing them. Employees should be enlightened about the positive side of the responsibility accounting so as to make this system more effective.

definition a responsibility center is assigned with specific job to be performed that may be called as products or services by using inputs like material labor fixed assets working capital etc. The output may be used internally for other departments or processes or may be sold outside. The responsibility accounting measures both inputs known as costs and outputs known as revenues and profits. According to Deakin and Maher "A Responsibility Center is a specific unit of an organization assigned to manager who is held responsible for its operations and resources."

The following features can be observed from the above definitions:

- a) It is a meaningful segment or division or department of an organization.
- b) Organizations are divided into meaningful segments for effective control
- c) It represents a sphere of authority or decision point responsible for assigned task or job expressed in terms of costs and revenues.
- d) Every responsible center is assigned with defined responsibility for specified output and authority for using inputs in the form of resources and costs.
- e) The output of the responsibility center may be used internally for other departments or processes or may be sold outside.

Types of Responsibility Centers

The Responsibility Centers are classified as (i) cost or expense center, (ii) Revenue Center, (iii) Profit center, and (iv) Investment center. This classification facilitates the evaluation of financial performance and control of responsibility centers.

- i) **Cost or Expense Center:** According to Anthony and Rece 'Cost centers are segments in which the managers are responsible for costs incurred but have no revenue responsibility'. There are many segments in the organization like production department, marketing department, quality control department, planning department, accounting department and other service departments, etc., wherein the expenditure incurred can only be measured but not revenue earned. Hence such segments are known as Cost or Expense Centers. The performance of a cost center is measured in terms of quantity of inputs used in producing a given output. The variation between the predetermined or budgeted inputs and actual inputs represent the efficiency or inefficiency of the cost center. Cost centers are widely used forms of responsibility centers.
- ii) **Revenue Center:** A Revenue center is a segment of the organization, which is primarily responsible for generating sales revenue. The managers responsible for revenue centers generally do not have any control over investment or costs except some expenses hence, the performance of revenue centers is evaluated by comparing the actual revenue with budgeted revenue and actual expenses with budgeted expenses. Marketing manager of a product line is an example of revenue center.
- iii) **Profit Center:** If the manager of a segment of any organization is responsible both for revenues, costs, it is known as profit center. The managers of such departments have the authority for taking decisions about inputs and responsibility about related outputs. Profit center managers aim at both production and marketing of the product. The performance of profit center managers is evaluated on the basis of budgeted and actual profits. Repairs and maintenance department in a company can be treated as profit center if it is allowed to bill other production departments for the services rendered to them.
- iv) **Investment Center:** An investment center is responsible for both profits and investments. The manager of an investment center has control over expenses, revenues, profits and investment made in assets. He is responsible for framing credit policy and has

13.6 PREPARATION OF RESPONSIBILITY ACCOUNTING REPORTS

Responsibility accounting reports should be attention-directing reports. They should help the appropriate authority to identify deviations without wasting much time and enable them to channelize their valuable time more effectively for taking corrective action. These reports should contain information about expected performance either in costs, revenues or profits, actual performance and variations. It enables the appropriate authority to identify the deviations quickly and helps in proper decision-making. The following illustrations help in understanding the responsibility reporting:

Illustration - 1

The following is the Control Report prepared by a Cost Accountant of Department X in a factory:

	Rs.	Rs.
Overhead directly assigned to department X:		
Indirect Materials (based on actual requisitions)	1,000	
Indirect Labor (job tickets)	900	
Overtime Charges	100	
Depreciation on equipments	500	2,500
Allocated Factory Overhead (38% of Factory space)		4,300
Allocated Overhead of Repair Shop (62% of repairs in repair shop done for dept. X)		1,200
Allocated Office and Administrative Overhead (on an agreed basis)		5,000
		13,000

Revise the report treating Department X as a responsibility center.

Solution

REVISED CONTROL REPORT OF DEPARTMENTS X

	Rs.	Rs.
Fully Controllable Costs:		
Indirect Materials	1,000	
Indirect Labor (job tickets)	900	
Overtime Charges	100	2,000
Partially Controllable Costs:		
Allocated Overhead of Repair Shop		1,200
Total Cost		3,200

Fabrication	560	30F
Maintenance	400	20A
Stores	210	40F
Planning	180	20A
Shop superintends office salaries & expenses	1,100	22F
Depreciation – Factory	3,880	40A
Works manager's office:		
Salaries & administration	3,810	40A
General office salaries & administration	4,270	30F
Managing Directors' office salaries & administration	2,800	20F

(A= Adverse, F= Favorable)

- i) Treating the machine shop, fabrication and assembly as cost centers; prepare cost sheets for each center with the help of the following additional information:

The shop superintendent devotes his time amongst machine shop, fabrication and assembly in the ratio 4:3:4. Other factory overheads are borne equally by the costs center.

- ii) Treating the machine shop, fabrication and assembly as Responsibility centers, prepare responsibility accounting report for shop superintendent.

Solution

COST SHEET FOR MACHINE SHOP, FABRICATION AND ASSEMBLY COST CENTRES

Elements of Cost	Machine Shop		Fabrication		Assembly	
	Budget Rs.	Actual Rs.	Budget Rs.	Actual Rs.	Budget Rs.	Actual Rs.
Raw material	900	920	460	470	760	800
Wages	800	790	600	620	720	730
Utilities	320	330	560	530	470	410
Prime Cost	2,020	2,040	1,620	1,620	1,950	1,940
Add- Factory overheads: Shop superintendent's office - salaries & expenses (Apportioned in the ratio 4:3:4)	400	392	300	294	400	392
Other factory overheads (See W.N.No. 1)	3,200	3,160	2,400	2,480	2,880	2,920
Factory cost	5,620	5,592	4,320	4,394	5,230	5,252
Add- selling & Adm. overheads (see W.N.No.2)	5,390	5,443	5,390	5,443	5,390	5,443
Total cost	11,010	11,035	9,710	9,837	10,620	10,696

b) Fabrication Center			
Raw material & components	460	470	10A
Wages	600	620	20A
Utilities	560	530	30F
Total (b)	1620	1620	NIL
c) Assembly Center			
Raw material & components	760	800	40A
Wages	720	730	10A
Total (c)	1950	1940	10F
Total of Three Centres (a + b + c)	5590	5600	10A

Illustration - 3

Nice Manufactures ready made garments by a simple process of cutting the clothes in various shapes and sewing the corresponding pieces together to form the finished products. The Sewing Department and Cutting Department Report to Production Manager who along with the Engineering Manager reports to the Director- manufacturing. The sales Manager, Publicity Manager and Credit Manager report to the Managing Director of the company. The Accounts department reports the following for the last quarter of 1995:

Items	Budgeted Rs.	Actual Rs.
Bad Debt Losses	5,000	3,000
Cloth Used	31,000	36,000
Advertisement	4,000	4,000
Audit Fees	7,500	7,500
Credit Reports	1,200	1,050
Sales Representatives Traveling Expenses	9,000	10,200
Sales Commission	7,000	7,000
Cutting Labor	6,000	6,600
Thread	500	450
Sewing Labor	17,000	18,400
Credit dept. Salaries	8,000	8,000
Cutting Utilities	800	700
Sewing Utilities	900	950
Director-marketing salaries and administration	20,000	21,400
Production engineering expenses	13,000	12,200
Sales Management office expenses	16,000	15,700
Production manager office expenses	18,000	17,000
Director-Manufacturing salaries & Admn.expenses	21,000	20,100

Illustration - 4

Satyam Manufacturing Ltd. has five plants A, B, C, D and E. Each plant has a forming, cleaning and packing department. Each level of Management has responsibility over costs incurred at its level. The budget for the current year has been set up as follows:

Particulars	Rs.
Plant	
A	67,500
B	61,250
C	54,200
D	67,500
E	67,500
Budgeted information for plant C is as follows	
Plant Manager's Office	1,175
Forming Department	15,000
Cleaning Department	27,725
Packing Department	10,300
Budgeted information for plant C Forming Department is as follows	
Direct Material	4,167
Direct Labor	7,500
Factory Overhead	3,334
The following additional budgeted data are available	
President Office	8,125
Vice-President Marketing	10,000
Vice-President, Manufacturing Office	2,084
The following actual costs are incurred during the year	
Plant	
A	63,825
B	62,150
C	54,238
D	65,550
E	68,400
The Actual cost for plant C (Forming department) were as follows	
Direct Material	Rs. 167 under budget
Direct labor	2,000 under budget
Factory Overhead	167 over budget

13.7 SUMMARY

Responsibility accounting serves as the basis for managerial control. It measures the performance of each decision authority, after dividing the responsibilities of an organization among various decision authorities, and its contribution in total performance. It is an effort to tie up and measure the executive responsibility of the organization with the accounting systems.

Responsibility Accounting system involves the division of organization into identifiable responsibility centers, defining the authority and responsibility of each responsibility center in terms of cost and revenues, assigning every responsibility center to an executive or person in charge, designing an accounting system to measure the performance of responsibility centers, measurement and communication of performance of every responsibility center to appropriate authority for control and taking appropriate action to keep the actual performance within the expected limits. Responsibility Center is an area of responsibility, which is controlled by an individual such as department, product lines, territories, or any other identifiable unit or combination of units. Responsibility centers can be classified as Cost center, Revenue center, Profit center, and Investment center.

A cost or expense center is a segment of an organization in which the Managers are held responsible for the cost incurred in that segment but not for revenues. A revenue center is a segment of an organization in which the managers are held responsible for generating sales revenue but does not possess control over cost, investment in assets but usually has control over some of the expenses of marketing department. A profit center is a segment of an organization whose manager is responsible for both revenues and costs. The manager of such segment has relevant authority to take decisions that affect both costs and revenues. An investment center is a segment of an organization whose Manager has control over revenues, expenses, and the amounts invested in the centers assets. The manager of investment center has more authority and responsibility than the manager of either a cost center or a profit center.

Responsibility Reports should be prepared appropriately to attract the attention of the authority concerned in identifying deviations without much effort. Attention directing reports about the performance of every responsibility center, consisting of controllable budgeted costs, revenues and actual costs and revenues and variations, always help the higher authorities to invest their abilities in an efficient manner for control of the affairs of organization.

13.8 MODEL ANSWERS TO ACTIVITIES

1. The prime aim of responsibility accounting is to control the performance of various in charges so as to attain maximize the goals of the organization.
2. The steps involved in responsibility accounting are inter-dependent and the same order has to be followed to control the affairs of the organization. This is so because, variations in the performance cannot be measured and reported to appropriate authority for decision making and control unless the organization is divided into identifiable segments, defining their authority and responsibility, assigning the same to individuals, measuring and comparing actual performance with budgeted performance.
3. One of the important and final step of planning is preparation of budgets for future course of action. Responsibility reports relating to many years help the management in understanding the behavior the variables. Such behavior becomes an input for future course of action. Hence it helps in preparation of budgets.

Zones	Products	Sales	Selling and distribution expenses allocated directly (Rs.)
Prime Zone	Ace	9,00,000	63,900
	Nice	9,00,000	84,465
	Grace	4,50,000	47,160
		22,50,000	1,95,615
Extension Zone	Ace	6,75,000	46,710
	Nice	4,50,000	47,700
	Grace	2,25,000	23,940
		13,50,000	1,18,350
Out Reach Zone	Ace	2,25,000	18,900
	Nice	1,80,000	15,165
	Grace	4,95,000	66,375
		9,00,000	1,00,440

Selling and Distribution Expenses at head quarters are as follows:

Office Expenses 94,500

Advertisement 1,35,000

Other Expenses 1,21,500

Advertisement costs are allocated to zones and Products on the basis of sales. Office expenses and other expenses are apportioned equally to the Zones or the products, while computing the profit or loss for the zones or the products as the case may be.

Prepare a comparative profit and loss statement, presenting Zonal performance as distinct from product performance.

[Ans: Net profit-Prime Zone Rs.92,385. Extension Zone Rs.16,650 Loss- out Reach Zone Rs.(5,940)]

2. A company measures performance of its product line divisions, A and B on segmental basis. The budgeted and actual sales figures for the month of March are given below:

Division	Unit Sales		Sales Revenue	
	Budgeted	Actual	Budgeted Rs.	Actual Rs.
A	20,000	24,000	2,00,000	2,40,000
B	40,000	40,000	2,00,000	2,40,000

Profit Center

- : A profit center is a segment of an organization whose manager is responsible for both revenues and costs. The manager of such segment has relevant authority to take decisions that effect both costs and revenues.

Investment Center

- : An investment center is a segment of an organization whose Manager has control over revenues, expenses, and the amounts invested in the centers assets. The manager of investment center has more authority and responsibility than the manager of either a cost center or a profit center.

Transfer Pricing

- : It is that notional value at which goods and services are transferred between divisions in a decentralized organizations.

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BLOCK - V : CORPORATE DISCLOSURES

This block deals with the contemporary issues in corporate disclosures. It is organised into seven units i.e., from 14 to 20.

Unit 14 explains the concept, objectives and methods of human resource accounting.

Unit 15 introduces the concept of financial disclosure and discusses the objectives and qualities of financial reporting.

Unit 16 explains the meaning of inflation accounting, need for inflation accounting and methods of accounting for inflation.

Unit 17 deals with the objectives of social accounting and social accounting reporting.

Unit 18 describes the segment reporting and the Accounting Standard 16 issued by ICAI on segment reporting.

Unit 19 discusses the concepts of value added, value added statements and economic value added reporting.

Unit 20 the last unit explains the meaning of harmonisation of international accounting, causes for diversity in accounting practices, standardisation at international level and obstacles to harmonisation of financial reporting.

UNIT - 14 : CORPORATE FINANCIAL REPORTING

Aims and Objectives

This unit focuses on various theoretical aspects of corporate financial reporting.

After studying this unit, you should be able to:

- describe the concept of financial reporting ;
- explain the need for financial reporting;
- distinguish between internal reporting and external reporting;
- identify the informational needs of users of financial information;
- discuss the objectives of financial reporting;
- describe the qualities of financial reporting; and
- explain the benefits of financial reporting.

Structure

- 14.0 Introduction
- 14.1 Concept of Financial Reporting
- 14.2 Internal Vs. External Reporting
- 14.3 Users of Financial Information
- 14.4 Need for Financial Reporting
- 14.5 Objectives of Financial Reporting
- 14.6 Qualities of Financial Reporting
- 14.7 Benefits of Financial Reporting
- 14.8 Summary
- 14.9 Model Answers to Activities
- 14.10 Self Assessment Questions
- 14.11 Further Readings
- 14.12 Key Words

14.0 INTRODUCTION

Accounting is an information and communication system. It is a process of identifying, measuring and communicating economic information to facilitate informed judgements and decisions by the users of the information, primarily financial in nature, about economic entities. It is useful in making economic decisions. The ultimate aim of accounting is to communicate economic messages on the results of business activities and events to the users in such a way to achieve maximum understanding on their part. The communication of accounting information of an entity to the user groups can be termed as corporate financial reporting.

Activity - 1

What is corporate financial reporting?

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14.2 INTERNAL REPORTING Vs. EXTERNAL REPORTING

From the point of view of an enterprise, reporting may either be internal or external. Internal reporting confines to the organisation only. It includes the reporting on the trends and behaviour of financial and non-financial aspects from one level to another level in the organisation structure of the enterprise. It is concerned with reviewing the past performance, providing information for future planning and control of various activities, etc. There is no standard type of reporting system for communicating the internal information. Such reports are prepared essentially to suit the requirements of each individual business enterprise. On the other hand, external reporting, more commonly known as corporate financial reporting, is intended to provide financial information to groups outside the enterprise, who are interested in the financial and operational performance and future of the enterprise. The external users are present and potential investors, creditors, employees, stock exchanges, governmental authorities, customers and others. This is called external information. Specific reports commonly referred to as financial statements have been developed for reporting such information. Importantly four types of financial statements are prepared to communicate the financial information to the outsiders viz., Balance Sheet, Income Statement, Statement of Retained Earnings and Statement of Changes in Financial Position.

The management generally communicates the information required by the external users by means of annual reports which invariably include the financial statements. Thus, the financial reporting has a broader scope and it includes the information contained in the financial statements. Such additional information may be reported either because the information is required to be disclosed by authoritative pronouncement, regulatory rule or custom, or because the management considers it useful to those outside the enterprise and discloses it voluntarily. Management's forecasts or other descriptions of its plans, description of an enterprise's social or environmental impact, chairman's statements are various reports which find place in the annual reports in addition to financial statements giving both financial and non-financial information.

Financial reports may contain two types reporting viz., statutory and non-statutory. The matters included in the reporting are either accounting information or non-accounting information. In India the companies are required to disclose the information in accordance with the provisions of Companies Act, regulations of Securities and Exchange Board of India and stock exchanges, the accounting standards issued by the Institute of Chartered Accountants of India, etc. Such reporting is known as statutory reporting. For example, the following information is required to be disclosed as per the provisions of Companies Act:

- a) Balance Sheet
- b) Profit and Loss Account
- c) Auditors Report
- d) A Report by the Board of Directors of the company with respect to -
 - i) the state of the company's affairs;

- v) **Customers:** The customers look to financial information about the ongoing nature of the enterprise, especially when they have a long-term involvement with, or are dependent on, the enterprise. They are especially interested in evaluating the viability of the enterprise as on-going customers.
- vi) **Employees:** They are interested in the stability, expansion and profitability of their employer. They would assess the ability of the enterprise to provide remuneration, retirement benefits, and employment opportunities.
- vii) **Government, Regulatory Agencies and Tax Authorities:** This group is interested in resource allocation and, therefore, wants to know about the activities of the business enterprises. They use information to stimulate the economy, to determine taxation policies and tax assessments. They also use this information in the compilation of national economic statistics. They will have access on a recurring basis to the tax-formatted financial statements and, in the case of tax audit to all the source documents.
- viii) **General Public:** Business enterprises affect members of the public individually and collectively. For example, business entities may make a substantial contribution to local economies in many ways, including the number of people they employ and their patronage of local suppliers. Financial statements may assist the public by providing information about the trends and recent developments in the prosperity of the enterprise and the range of its activities.

While all the informational needs of these users cannot conceivably be met by only one set of financial statements, there are needs that are common to all users. As the investors are the providers of risk capital to the enterprise, the provision of financial information that meets their needs and expectations is likely to meet many or most of the needs of other users who are interested in estimating risks and potential rewards attached to the operations of the enterprise.

14.4 NEED FOR FINANCIAL REPORTING

The separation between the ownership and management of companies, the increasing complexities and size of organisations, the growing awareness of the public and their keen interest in the affairs of corporates, and the changing socio-economic and political environment have enhanced the need for and significance of the disclosure of information in the annual reports of the companies.

The need for full disclosure is irrefutable in a free enterprise economy. The potential investors require financial information for making sound economic decisions. Financial reporting supplies this information. The investors can assess the risk associated with their investment and the return on their investment on the basis of such reported information. It assists the investors in selecting the best portfolio for their investments.

The company form of organisation generally raises the capital from the public. It must, therefore, enjoy the credibility and confidence of the public. Disclosure of financial information helps an enterprise to enjoy public confidence and investors normally prefer to invest in a company that discloses fully than a company that does not.

In general, accounting information is considered to be the chief means of reducing the uncertainty under which investors make decisions. With the help of adequate information, the capital owners will be in a position to take wise investment decisions leading to proper allocation of resources. It helps to maintain the price stability of shares in the capital market. It benefits

ties, working concepts as a basis for financial reporting, and the most suitable means of measuring and reporting the economic position, performance and prospects of enterprises. The Corporate Report's main findings are as follows:

The basic philosophy and starting point of the report is that the financial statements should be appropriate to their expected use by potential users. It has assigned the responsibility for reporting to the economic entity having an impact on the society through its activities.

The report defined the users as those having a reasonable right to information and whose information needs should be recognised by the corporate reports. The users are identified as the equity investor group, the loan creditor group, the government and the public. In order to satisfy the objectives of annual reports set by the basic philosophy, seven desirable characteristics, viz., relevance, understandability, reliability, completeness, objectivity, timeliness and comparability, are cited. And after documenting the limitations of current reporting practices, the report has suggested the need for the additional statements. They are:

- 1) A statement of value added to show how the wealth was produced, and how it has been distributed among the employees, the state, the providers of capital and its reinvestment for maintenance and expansion.
- 2) An employee report, showing the size and composition of the work force relying on the enterprise for its livelihood, the work contribution of employees and the benefits earned.
- 3) A statement of money exchange with government, showing the relationship between the enterprise and the state.
- 4) A statement of transactions in foreign currency, showing the direct cash dealing between the UK and other countries.
- 5) A statement of future prospects, showing the likely future profit, employment and investment levels.
- 6) A statement of corporate objectives, showing management policy and strategies.

Financial Accounting Standards Board (FASB)

To develop objectives of financial statements, a Study Group was appointed in 1971 by The American Institute of Certified Public Accountants (AICPA) under the Chairmanship of Robert M. Trueblood. The study group submitted its report to AICPA in 1973. The Financial Accounting Standards Board (FASB) of USA (Concept No. 1 "Objectives of Financial Reporting by Business Enterprises) laid down the following objectives of financial reporting, which are most comprehensive, in 1978 after considering the Trueblood Committee Report.

- i) Financial reporting should provide information that is useful to present and potential investors, creditors and other users in making rational investment, credit and similar decisions. The information should be comprehensible to those who have a reasonable understanding of business and economic activities and are willing to study the information with reasonable diligence.
- ii) Financial reporting should provide information to help present and potential investors and creditors and other users in assessing the amounts, timing and uncertainty of prospective cash receipts from dividends or interest and the proceeds from the sale, redemption, or maturity of securities or loans.

Activity - 3

State the objectives of financial reporting as laid down by the FASB of USA.

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14.6 QUALITIES OF FINANCIAL REPORTING

As stated earlier, the main purpose of financial reporting is to provide information useful for making economic decisions. The Accounting Principles Board of USA and the Trueblood Report have suggested certain qualitative requirements of financial reporting. These qualities make the information distinctly useful and help in achieving the purposes of financial reporting. The qualities that command wider acceptance and recognition for making information useful in accounting and reporting are as follows:

i) Relevance

Relevance is closely and directly related to the concept of useful information. The Accounting Principles Board has described the relevance as the primary qualitative objective of financial information. It implies that all those items of information should be reported, that may aid the users in making decisions and predictions. The whole exercise of corporate disclosure is futile, if the information disclosed is not relevant to the needs of the users. Relevant information is that which satisfies the informational needs of the users and help them in evaluating the management and its policies for the purpose of their decisions. The question of relevance is related to the purpose for which the information is likely to be used. It reduces the uncertainty about future events, acts and results..

ii) Reliability

Reliability is described as one of the two primary qualities that makes the information useful for decision making. The information has the quality of reliability when it is free from material error and bias. It is the responsibility of management to report reliable information in the annual reports. This is fulfilled by applying generally accepted accounting principles appropriate to the enterprise's circumstances. If the management decides to disclose uncertainties and assumptions in annual reports, the reliability of the information is increased. For information to be reliable, it must be verifiable to some degree, and it must be free from bias. The quality of verifiability provides a significant degree of assurance that accounting measures represent what they purport to represent. Freedom from bias means that facts have been impartially established and reported. It implies that the events or results should be reported in the financial statements without the bias or prejudice of the persons concerned with reporting of such information.

iii) Understandability

Any information can be useful to its user only when it is understood by him. The information should be presented in reports in such a way that it can be understood by reasonably well informed as well as by sophisticated readers. Presentation of information should not only facilitate understanding, but also avoid wrong interpretation of financial statements. For this purpose the information should be expressed in a form and with terminology adopted to the users' range of understanding. Understandability does not mean simplicity. Rather, it means the presentation of information in the clearest form so that the users can make the best use of it.

it does not mean that the providers of information should not have a purpose in mind for financial reporting. However In fact, information must be purposeful.

Activity - 4

Explain the two primary qualities of financial reporting.

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14.7 BENEFITS OF FINANCIAL REPORTING

The adequate and reliable disclosure in financial statements and reports would be useful in many respects. The benefits of financial reporting are follows:

- i) **Economic Decision Making:** The financial reporting provides the required information to the investors to help them in making sound economic decisions. They can assess the risk attached, the return on investment, etc., based on the reported information. This process leads to efficient allocation of resources throughout the economy. The financial reporting provides information for evaluating the strengths and weaknesses of a enterprise and its ability to meet its commitments.
- ii) **Reduces Cost of Capital:** Adequate disclosure of financial information in the financial statements would win the public confidence and thereby the capital procurement is facilitated. It enhances market price of company's shares. It will also enhance the future marketability of subsequent issues even at higher prices. This will reduce the cost of capital on account of financial leverage.
- iii) **Stability of Share Prices:** Adequate disclosure of information tends to minimise the fluctuations in the company's share prices. Fluctuations in share prices occur because of the ignorance prevailing in the investment market. The securities markets are in possession of full information available from the financial reporting, thereby the ignorance and uncertainty will be reduced. This leads to stability in the share prices.
- iv) **Employee Decisions:** The reported financial information will help the present and prospective employees to assess the risk and growth potential of the company, their job security and possibilities of promotions in future. These decisions lead to proper allocation of human capital in the economy. The financial data will also provide labour unions and individual employees a basis for contractual wage and employment benefit related demands.
- v) **Customer Decisions:** The financial reporting provides the customers with the required information to evaluate the value of a warranty or to predict the availability of supporting services or continuing supplies of goods over a period of time.
- vi) **Managers' Decisions:** A consistent disclosure of financial information will help the management to make a comparative study of the company's financial position and its earning capacity with the previous periods of years. The reported financial information about the financial activities of the undertaking will be useful in judging management's ability to utilise the enterprise's resources.
- vii) **Financial Institutions' Decisions:** The financial institutions use the reported financial information to assess the present and future solvency of the business entities.

making is more relevant. The objective of relevance helps in selecting items of information that will facilitate economic decisions.

Reliability is described as the other primary quality, that makes accounting information useful for decision making. Reliable information is required to form judgements about the earning potential and financial position of a firm. It is this quality which permits the users of data to depend upon with confidence. Reliability of information can be achieved if generally accepted accounting principles are applied.

14.10 SELF ASSESSMENT QUESTIONS

A. Short Answer Questions

1. Explain the concept of corporate reporting.
2. What is the need for corporate reporting?
3. Explain the two primary characteristics of financial reporting.
4. Distinguish between internal reporting and external reporting.
5. Differentiate between statutory reporting and non-statutory reporting.
6. Distinguish between general purpose report and specific purpose report.
7. What are the basic objectives of financial reporting?
8. What are the objectives of financial reporting stated by the Stamp Report?
9. Who are the users of financial information?
10. 'Financial reporting has a broader scope than the financial statements' - Explain.

B. Long Answer Questions

1. What is financial reporting? Explain its significance.
2. Explain the information needs of various users of financial information.
3. Discuss in detail the objectives of financial reporting.
3. Explain the developments that took at international level on the objectives of financial reporting.
4. Discuss the qualities of financial reporting.
5. Discuss the main objectives of financial reporting as developed by the FASB (USA).
6. Discuss the benefits of financial reporting.

14.11 FURTHER READINGS

1. Saced, M. : **Corporate Financial Reporting**, Anmol Publications, New Delhi, 1990.
2. Porwal, L.S. : **Accounting Theory - An Introduction**, Tata McGraw Hill, New Delhi, 1989.
3. Jawahar Lal : **Accounting Theory**, Himalaya Publishing House, Mumbai, 2003.

UNIT – 15 : HUMAN RESOURCE ACCOUNTING

Aims And Objectives

This unit aims at explaining the meaning, need and methods of Human Resource Accounting.

After studying this unit, you should be able to:

- explain the concept and need for human resource accounting;
- discuss the models of human resource accounting;
- evaluate the merits and limitations of human resource accounting; and
- analyse the human resource accounting in India.

Structure

- 15.0 Introduction
- 15.1 Concept of Human Resource Accounting
- 15.2 Need for and Objectives of Human Resource Accounting
- 15.3 Models of Measuring Human Assets
 - 15.3.1 Capitalisation of Salary Method
 - 15.3.2 Economic Value Method
 - 15.3.3 Return on Effort Employed Method
 - 15.3.4 Behavioural Variables Method
 - 15.3.5 Other Methods
- 15.4 Merits of Human Resource Accounting
- 15.5 Limitations of Human Resource Accounting
- 15.6 Human Resource Accounting in India
- 15.7 Summary
- 15.8 Model Answers to Activities
- 15.9 Self Assessment Questions
- 15.10 Further Readings
- 15.11 Key Words

15.0 INTRODUCTION

Many innovations took place to recognise people as organizational resources. One of the notable contributions to the literature of accounting, is Human Resource Accounting (HRA). The Chief Executives of many organisations often say that their employees are the most important assets, while presenting the annual reports in the general meetings. Quite rightly so. However the question is: Is there any method to measure the worth of this important asset? How to show the human asset value in the balance sheet of an organization? All these aspects are explained in this unit.

- iii) It provides qualitative information on human resources which will help the managers as well as investors in making decisions.
- iv) It communicates the worth of human resources to the organisation and the society at large.

Rensis Likert, a proponent of HRA, has listed the following as the objectives of HRA:

- i) to furnish cost value information for making management decision and maintaining human resources in order to attain cost effective organisational objectives;
- ii) to allow managerial personnel to monitor effectively the use of human resources;
- iii) to provide a sound and effective basis for asset control;
- iv) to aid in the development of management principles by classifying the financial consequences of various practices.

15.3 MODELS OF MEASURING HUMAN ASSETS

Measuring human assets is not at all a difficult task. Like the measurement of any physical assets, we can easily ascertain the worth of human assets. Normally, we employ either capitalisation method or economic value method or ROI method for the valuation of any asset. In Human Resource Accounting also we employ these methods with necessary identification of the variables used in the process of valuation. Besides these methods, Behavioural Variables method is employed in HRA. The models of HRA will have their own unique methodology. These methods are discussed in the following sub-sections:

15.3.1 CAPITALISATION OF SALARY METHOD

One of the earliest methods of HRA was to capitalise the salary bill of an organisation for a definite period. Hermanson suggested that human resource must be reported as an asset in the financial statements. He has proposed an Adjusted Present Value model to quantify the value of human capital of a company. The first stage is to compute the present value of future wage payments for five years. The next step is to find out the Efficiency Ratio (ER). Hermanson used efficiency ratio to adjust the discounted future wage stream.

$$ER = \{[5(RF_0)/(RE_0)] + [4(RF_1)/(RE_1)] + [3(RF_2)/(RE_2)] + [2(RF_3)/(RE_3)] + [(RF_4)/(RE_4)]\}$$

Where RF indicates firm's rate of return; RE indicates economy's rate of return.

This ratio is applied to adjust the present value of the future wage payments. The resultant figure is the value of human (operational) assets. He categorised a highly trained sales force as an example for 'operational assets' differentiating them from legally owned assets. Hermanson further suggested the following entries to record his theory in the books of accounts:

If the efficiency ratio is one (=1), the value of both credit and debit will be same as follows:

Human Resources (Operational Assets)	Dr.	x x x
To Future Wages Payable		x x x

But more than one (>1) efficiency ratio denotes excess worth and less than one (<1) efficiency ratio indicates inefficiency.

4	5	0.683	3.415
5	4	0.621	2.484
Total	20		14.851

If the Efficiency Factor is 1.2 and the adjusted human asset value is equal to Rs.17.82 lakhs.

15.3.2 ECONOMIC VALUE METHOD

The economic value method assumes that the marginal productivity of human beings is at its optimal level. Two economists, Lev and Schwartz, have valued the economic worth of human capital by employing the following mathematical model:

$$V_r = \sum_{t=r}^T \frac{I(t)}{(1+R)^{t-r}}$$

where V_r is the value of human capital of a r years old; $I(t)$ is the person's annual earnings until retirement; R is the rate of discount; ' t ' is the age of retirement; and ' r ' is the present age of the employee.

The model considers employee compensation as the reasonable measures of individual's value to an organisation. The human capital model is mainly dependent on present value of annual earnings until retirement, adjusted with the death probability of the individual. This model invariably considers the value as its basis. But the model suffers from the main drawback as that it does not consider the effect of employee mobility before death on the earnings. Nevertheless, this model has been adopted by a number of companies in reporting the human assets. This model is advantageous in terms of its simplicity to compute the worth of human assets. Moreover, this model has given a lot of scope to the Indian organisations to add a few more additional features like weightage for experience, etc.

15.3.3 RETURN ON EFFORT EMPLOYED (ROEE) METHOD

An effective allocation of human resources among important functions of the organisation, will improve the overall productivity. Different functions in various geographical/product divisions/areas of the organisation are the basis for computing the amount of effort employed. ROEE method involves the measurement of effort employed on different functions like purchasing, manufacturing and selling. The information generated by this method will help in making more efficient allocation and use of human resources. The factors that distinguish the quantity and quality of effort employed are identified to arrive at the contribution of individuals. According to this method, these factors relate to: (i) Level or Grade of Job; (ii) Effectiveness with which the employee performs the job; and (iii) Experiences of individuals, which will increase the job performance up to a point.

The job grades are distinguished based on nature of work or compensation or wage structure. Under this method of human resource accounting, the following factors are applied to job grades:

Job Grade	Factor
10 (eg. Vice-President)	10
7 (eg. Sales Manager)	7

Activity - 1

Distinguish between Conventional ROI and ROEE.

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15.3.4 BEHAVIOURAL VARIABLES METHOD

Viewing people as organisational assets is virtually different from viewing other physical assets. The physical assets do not have behavioural dimension by themselves unlike human assets. The value of human assets will depend upon the way in which they are handled or managed or treated. In this context, the important variables that will affect the value of human assets are identified by Likert, a social scientist from the University of Michigan, for the determination of the human asset value. Likert developed a model to diagnose the changes in human organisation over a period of time. He has classified human variables into three categories, viz., (i) Causal variables, (ii) Intervening variables, and (iii) End-result variables. The interaction between causal and intervening variables has been shown to affect the job satisfaction, costs, productivity and earnings, the end-result variables. Some of the end-result variables are monetary in nature. Likert established a very concrete relationship between these variables and the organisational performance. For assessing the change in value of the productive capability of the human organisation from time to time, Likert designed this model. The employee's feeling about how he is treated, handled and utilised and also the way in which he synchronises his personal interests with that of organisational objectives are the key determinants of his commitment, loyalty and attitude towards the enterprise. Managerial leadership determines organisational climate which in turn influences the subordinate satisfaction and subsequently the total productive efficiency. Time lag of two years or more, often exists between a change in causal variables and the resultant changes in the end-result variables.

Likert identified four Systems of Management, viz., (a) System - I to represent Exploitative Style of Management; (b) System - II for Benevolent Style of Management (c) System - III for Consultative Style of Management and (d) System - IV for Participative Management Style. He observed that a firm in which the causal variables display the characteristics of participative management style, will generate more effective intervening variables. He argues that the philosophy and practice of conventional accounting concentrate on a few end-result variables which are consistent with the exploitative type of management. He opines that by overemphasising short-run profits and cost savings the present accounting system penalises the managers who are making the greatest long-run contribution to the organisation. Although these human assets are as important to the future growth and survival of an organisation as any physical assets their loss is not immediately noticeable. Therefore, the existing accounting system will reflect the expected gains of the system - I manager, but fails to record the real costs that are incurred. However, the decrease in human assets will eventually be reflected in the accounting reports as profits begin to fall. Likert thus emphasized the importance of accounting for the human resources on a continuing basis.

The advantages of Likert's model may be seen from the perspective of organizational development over a period of time. Obviously, the model expects organisations to build human assets for better productivity and profitability in the long run. It also alerts the management about the possible disadvantages of excessive pressures on human resources, which will result in losses in the long run. The only disadvantage of this model is that it requires a continuous research based survey approach to monitor what is happening to the human resource as against the styles of management. The implementation of this model needs people with high levels of

15.4 MERITS OF HUMAN RESOURCE ACCOUNTING

Though HRA is intended primarily to quantify and report the value of human assets of an organisation, it is also considered as a managerial tool to improve precision of human resource decisions. Besides, HRA has significant uses for present and potential investors and other users of financial statements. In the field of managerial decision making, the human resource data as part of the management information system helps in making meaningful choices between various types of human investments and investments in other assets. Decision making is facilitated in areas, such as Direct recruitment vs. Promotion, Transfer vs. Retention, Retrenchment vs. Retention, Usefulness of cost-reduction programs in view of their possible impact on human relations, evaluating the voluntary retirement proposals, etc. The inclusion of relevant human resource data would create a more complete management information system. Human resource valuation provides the management with information about change in the structure of its manpower. The value of a firm's human resources is helpful to potential investors and other users in making long-term investment decisions. It provides the organisation with a more accurate accounting to its return on the total (financial, physical and human) resources employed. HRA data will be of great use for the investors in making decisions on investing or divesting in the selected companies. Availability of data relating to the worth of human assets, human resource productivity, etc., will increase the efficiency of investment decision making.

15.5 LIMITATIONS OF HUMAN RESOURCE ACCOUNTING

Human Resource Accounting is still in the development stage. There are no accounting standards governing this concept. As a result the application of HRA is limited to the voluntary disclosure practices of the companies. The implementation of the cost models involves considerable ground work besides time and special attention of the management. R.G. Barry Corporation, while discarding the system of HRA in 1974, reported that the costs of HRA system implementation were heavy. The problems of taxation also discouraged HRA implementation, since the capitalisation of human resource costs resulted in higher profits. Even in the case of value models like human capital model, the debate on the net value of human resources to the organisation remained objectively inconclusive, in view of the influence of multiple factors (including market forces) on the economic value added in an organisation. The accounting world did not become fully convergent with the concept, design and implementation of HRA at organisational level. Therefore, the extent of application of HRA has been limited to the usage of one of the valuation models, usually Lev and Schwartz Model, and reporting the human resource value as additional information in the annual reports of the interested companies, like Infosys.

15.6 HUMAN RESOURCE ACCOUNTING IN INDIA

BHARAT Heavy Electrical Limited, a leading public sector undertaking and one of the Indian companies in the FORTUNE - 500 list of largest corporations outside USA, has adopted Human Asset Accounting in its Annual Report 1974-75, for the first time in India. BHEL initially adopted Lev & Schwartz Model for computing the value of its human resources. Under this model, the present value of anticipated future earnings from employment is considered as a measure of Human Resource Value. Gradually, BHEL has incorporated certain improvements relating to human resource efficiency for valuing its human resources. BHEL has classified its employees into six categories, based on skills, type of work, experience and qualifications. In each category ten to fifteen salary grades are identified to facilitate human resource value computation. Mean Salary in each grade is taken as the vital factor in the basic framework of

The interaction between causal and intervening variables has been shown to affect the job satisfaction, costs, productivity and earnings, the end-result variables. Some of the end-result variables are monetary in nature. The employee's feeling about how he is treated, handled and utilised and also the way in which he synchronises his personal interests with that of organisational objectives are the key determinants of his commitment, loyalty and attitude towards the enterprise. Managerial leadership determines organisational climate, which in turn influences the subordinate satisfactions and subsequently the total productive efficiency.

15.9 SELF ASSESSMENT QUESTIONS

A. Short Answer Questions

1. Explain the concept of Human Resource Accounting.
2. Examine the need for Human Resource Accounting.
3. What is economic value method?
4. What are the objectives of Human Resource Accounting?
5. Explain the salient features of the Behavioural Model of Human Resource Accounting?
6. How do you identify Human Resources?
7. What are the merits of Human Resource Accounting.
8. What is opportunity cost approach of Human Resource Accounting?

B. Long Answer Questions

1. Discuss the concepts of Human Resource Accounting. Explain its importance in the present context.
2. Explain, in brief, the various methods of valuing human resource assets.
3. What are the merits and demerits of Human Resource Accounting?
4. Write a detailed note on Human Resource Accounting in India.
5. What are the objectives of Human Resource Accounting? How is it important to the business?
6. Discuss the Lev and Schwartz Model and Behavioural Variables Model of Resource Accounting.

15.10 FURTHER READINGS

1. Flamholtz, E. : **Human Accounting**, Dickonson Publishing Co., 1974.
2. Prabhakara Rao, D. : **Human Resource Accounting**, Inter-India Publishing Co., 1986.

UNIT - 16 : INFLATION ACCOUNTING

Aims and Objectives

This unit aims at explaining the methods of inflation accounting.

After studying this unit, you should be able to:

- state the limitations of the Conventional Accounting;
- recognise the need for adjustments of changes in prices;
- discuss the merits and limitations of prominent methods of inflation accounting like CPP and CCA; and
- prepare the accounts based on the above methods.

Structure

- 16.0 Introduction
- 16.1 Conventional Accounting
- 16.2 Meaning of Inflation Accounting
- 16.3 Methods of Inflation Accounting
 - 16.3.1 Current Purchasing Power Accounting
 - 16.3.2 Current Cost Accounting
- 16.4 Valuation of Balance Sheet Items
- 16.5 Treatment of Profit and Loss Account Items
- 16.6 Adjustments/Provisions
- 16.7 Summary
- 16.8 Model Answers to Activities
- 16.9 Self Assessment Questions
- 16.10 Further Readings
- 16.11 Key Words

16.0 INTRODUCTION

As we have studied in unit -14, the important dimensions of HR Accounting include concept of HR accounting, need for HRA and methods of measuring Human Assets. In this unit, the limitations of conventional accounting and the alternative Accounting Models like CPPA and CCA are presented.

This unit is devoted to accounting for price level changes i.e., inflation accounting, which is another recent development in the area of accounting. The trend in which the prices, in general, are rising rapidly during any period is referred to as "inflation". For a long, we have had successive periods of inflation of varying degrees. When most prices move up at the same time, and at a rapid pace, we face the problems of serious inflation. Among the problems accompanying rapid price rise is one of the accounting problems resulting from changes in the purchasing power of money.

vi) **Internal inconsistency**

It has considerable internal inconsistency caused by exceptions to the use of general principles or by the modifying conventions. Examples of such inconsistency are the use of current values if lower than historical costs, but not if they are higher.

vii) **Too much flexibility**

It has too much flexibility permitting a number of alternative procedures to account for the same economic activity, such as calculation of depreciation under straight line method, written down value method, etc.

16.2 MEANING OF INFLATION ACCOUNTING

According to American Institute of Certified Public Accountants, "Inflation accounting is a system for accounting which purports to record as a built-in mechanism all 'economic events' in terms of current cost". Thus, inflation accounting is a system of maintaining the accounts just like historical accounting. The difference lies in the process of matching cost against revenue. In historical accounting cost represents "historical cost" whereas in inflation accounting it represents the "cost prevailing at reporting date or time". This matching process in inflation accounting should be automatic and in-built in the system itself and not adhoc in nature dealing only with some economic and financial events. In other words, it will be wrong to equate replacement cost accounting with inflation accounting.

The distinctive features of inflation accounting are as follows;

- the recording procedure is automatic.
- the unit of measurement is not assumed to be stable.
- it considers all elements of the financial statements and is not concerned only with fixed assets or closing stocks.
- realization principle is not followed rigidly, particularly, when recording long-term loans and fixed assets at the current value.

Need for Inflation Accounting

Financial accounts are the basis on which the success of the business is measured and on which investors can find out whether or not their investment is safe and will produce a reasonable return for them. Financial accounts, therefore, have a significant effect on the business, and shareholders are particularly interested in them from the point of view of not only obtaining a good return on their investment but also of maintaining the value of that investment. But if this value is expressed in terms of historical costs, without allowing for the effect of inflation, it could be illusory. Hence, the need for inflation accounting.

The purpose of inflation adjusted accounting is to restore the principle of matching current revenues with current costs or current purchasing power to the profit and loss account, thus removing the inflationary element from historic cost profit and/or allowing the concept of physical capital maintenance to be adopted.

16.3 METHODS OF INFLATION ACCOUNTING

There are two well-known systems of inflation accounting of which the entrepreneur may choose one. The earliest method is known as current purchasing power accounting (also

Conversion Factor = Index at the date of revaluation / Index at the date of existing figure

$$= 200/150 = 1.33 \text{ or } 4/3$$

Converted figure = $30,000 \times 4/3 = \text{Rs. } 40,000$

or

$$= 30,000 \times 200 / 150 = 40,000$$

Mid period conversion or average index

Average index of the period can be taken as the index for the conversion factor relating to sales, purchases, income, expenses, etc., which are assumed to have taken place at the average level. If average index is not available, index of the mid-period may be taken, if it is also not available average index at the beginning and at the end period may be substituted.

Distinction Between Monetary And Non-Monetary Items

Monetary items remain fixed in terms of the current rupee regardless of what happens to the general price level. Examples of monetary items are cash, bank deposits, bills receivables, bills payable, creditors, book debts, outstanding expenses, prepaid expenses and the like.

All other items of the financial statements not falling under monetary group are non-monetary in nature. Such items are affected by changes in the price level and hence they need adjustment. Examples of Non-monetary items are raw materials, finished and semi finished goods, plants, fixed assets, accumulated depreciation, etc. Non monetary items are to be restated to represent current general purchasing power by using conversion factor

Equity share capital is neither monetary or non-monetary. It is treated as residual item. Instead, it may also be converted by conversion factor.

Net gain or loss on monetary items

Separate statement is to be prepared to bring out gain or loss on monetary items because the change in the purchasing power of rupee has an effect on monetary assets and monetary liabilities. Even though monetary items are shown at their original value, it is necessary to find out to the above gain or loss. Such gain or loss must be taken into account when the Profit & Loss Account is prepared under CPP method.

Ascertainment of profit

- i) Net Change Method
- ii) Conversion of Income Method

i) Net Change Method

Under this method, the opening balance sheet under historical method is converted into CPP terms. For this purpose, including monetary items, the appropriate indices are to be used. The difference in the balance sheet must be taken to the reserve after converting the equity also. Like-wisè the closing balance sheet must be restated in CPP terms excluding monetary items. The difference must be taken as reserve after conversion of equity also. Profit is equal to the net change in the reserve. If the equity is not converted in the both the balance sheets, the residue value may be treated as equity. The net change in equity will be regarded as profit.

Depreciation is charged by the company on building purchased in 2000 for Rs. 27 lakhs when the price level index was 65. It is being depreciated by Rs.1,37,500 every year. Other expenses have been paid uniformly throughout the year. The price level index was 120 in the beginning of 2000 and 140 at the end of 2000.

You are required to restate the income statement according to CPP method

Solution

**Restated income statement
for the year ending 31st December, 2000 [CPP Method]**

	Historical figures Rs.	Conversion factor Rs.	Restated Figures Rs.
Sales	6,90,000	130/120	7,47,500
Cost of sales			
Depreciation	1,35,000	130/65	2,70,000
Other expenses	4,50,000	130/120	4,85,500
Net Income	1,05,000		[10,000]

Illustration - 3

The following information has been disclosed by the balance sheet of a firm.

	Rs.
Monetary assets	10,000
Monetary Liabilities	5,500

The price index at the time monetary assets were acquired, liabilities were created was 100. It stands at 130. Presuming that there has been no change in the amount of assets and liabilities, calculate the "general purchasing power gain or loss".

Solution

	Historical Cost Rs.	Conversion Factor Rs.	Converted Amounts Rs.
Monetary Assets	10,000	130/100	13,000
Monetary Liabilities	[5,500]	130/100	[7,150]
Net Monetary Assets	4,500		5,850

Since there has been no change in net Monetary Assets during the year, there is general purchasing power loss of Rs. 1,350 (i.e Rs. 5,850 – Rs. 4,500).

Illustration – 4

From the following information, first ascertain the constant rupee first-in-first out [i.e., FIFO] cost of goods sold and then restate the same into 1999 end purchasing power rupee.

- i) Calculate CPP value of the shares at the end of 1998 and 1999.
- ii) Under CPP accounting what gain or loss would be shown in respect of the shares?
- iii) What, in fact, was the gain or loss in purchasing power in respect of the shares during 1999?

16.3.2 CURRENT COST ACCOUNTING

In order to rectify the defects and meet the problems of historic cost accounting and the current purchasing power method, an accounting system known as current cost accounting (CA) is devised. The CCA method matches current revenues with the current cost of the resources which are consumed in earning them. Historic cost figures are adjusted individually for the changes in prices which are specific to the physical resources. The blanket approach of the CPP system satisfies the concept of physical capital maintenance.

Alternative to Current Purchasing Power method, is the Current Cost Accounting (CCA) method of inflation accounting. United Kingdom, was the birthplace of CCA also. The method was recommended by Sandilands Committee appointed by Her Majesty in 1975. The Institute of Chartered Accountants in England and Wales prescribed the method for adoption. The feature of their method is that the non-monetary assets, such as fixed assets and inventories are to be shown at their value to business. The value of these assets to the business is their replacement value. C C A method advocates that replacement value of non-monetary assets calculated based on general price index and not on the ascertained cost from the market. The value of fixed assets to the business is their replacement values (based on price index) or net realizable values or their economic value, whichever is higher. Inventories on the other hand are valued at their replacement value (again based on price index) as on the date of balance sheet or realizable value, whichever is lower. On the profitability statement, C C A stipulates

- i) Adjustments for depreciation based on the replacement value of assets;
- ii) To assign replacement value to the cost of goods sold;
- iii) Adjustments for the cost of additional working capital needed on account of inflation
- iv) Gearing adjustments.

Features of Current Cost Accounting

The main features of the Current Cost Accounting method are given below:

- i) Accounts will continue to be drawn up in terms of monetary units.
- ii) Accounts should show the value to the business of the company assets at the balance sheet date.
- iii) Profit for the year should consist of the company's operating gains. Extra-ordinary gains may be shown as profit but should be distinguished from operating gains.
- iv) Accounts drawn up in this way should become the basic published accounts of companies. In addition the net value of assets and depreciation for the year on historic cost basis should be shown in notes to the accounts.

Discounted Present Value

Discounted present value is based on the expected future net receipts attributable to the asset. This approach requires that the future use of assets be identified. The present value is determined by discounting these expected future net receipts taking into consideration appropriate interest and probability factors.

Specific Price Indices

Specific price indices are used as a means to establish a current price for an item when no recent transaction involving that item has occurred or where there is no price list available. Evidence that actual current values are different from those indicated by the application of a specific price index is not ignored but in the absence of such evidence the index based amount is presumed to be appropriate.

16.4 VALUATION OF BALANCE SHEET ITEMS

The 'value to the business' if any owned by a company is the loss the company would suffer if it were deprived of the asset. It will normally be appropriate to value assets in the balance sheet by reference to current replacement cost (allowing for depreciation where appropriate) taking any holding gains arising to a fixed asset revaluation reserve.

The value to the business of land and buildings occupied by the owner himself, will normally be the open market value for their existing use, estimated acquisition costs. If, however, an open market valuation of the property as a whole cannot be made, the depreciated replacement cost of the building and the open market value of land including the estimated acquisition costs for its existing use should be taken as their value to the business. Valuation should be made by professionally qualified valuers at intervals of not more than five years.

Plant and machinery, motor vehicles, office equipment, fixtures and fittings, ships and aircrafts should normally be valued at their net current replacement cost.

Quoted investments or valued at mid of market prices and un-quoted investments are valued either on the basis of the current cost net worth of the company in which the investments have been made or on the basis of the present value of the likely further income from the un-quoted investments. A different treatment is to be given for investments which are held and current assets and for investments in subsidiaries.

Debtors, cash and current liabilities should continue to be shown in the balance sheet at their net realizable value as at present. However in a period of inflation, a business loses purchasing power by holding monetary assets like debtors and cash. It gains by holding monetary liabilities because the creditors have to be paid a fixed amount despite inflation and consequential loss in the purchasing power of the monetary liability.

To show the gain or loss on holding monetary liabilities and assets, a statement should be prepared by way of a note to the account. In CCA such 'gain' or 'loss' are not included in profit. However, the effect on the shareholders interest, whether benefit or adverse arising from a company financing its activities in part by borrowing during a period of inflation will show through in a current cost balance sheet. The reason for this is that any holding gains which arise on assets financed by borrowing will be credited to the shareholders interest while the company liabilities will remain unchanged.

and inventories. These assets are also partly financed by loans. It, therefore, seems to be improper as these assets are not subject to gearing adjustment.

iv) Materiality Factor

Materiality factor is a basic accounting principle and, therefore, CCA technique is also no exception to this. This means that a firm should not be required to make a particular adjustment as required under CCA method if it feels that it is rather insignificant. The implication of this suggestion is that each firm should decide for itself whether any of the adjustments required under CCA can be ignored. For example, a firm like oxygen company, which does not use much materials, should be permitted to ignore cost of sales adjustments [COSA]

v) Subjectivity Element

There is too much of subjectivity element in CCA method. For example, the valuation process is subject to the discretion and the personal judgment of the managers and there is no single method of valuation. Sandilands Committee also observed, "The process of valuation is inevitably more subjective than the ascertainment of historical cost, in that not only the value placed on an asset, but even the choice of the basis of valuation, is more dependent on the "judgment of the valuer than the ascertainment of cost and less susceptible to verification by reference to independent faucal evidence." However, it should be admitted that there can be no logical comparison between HCA method and CCA method. In case, such a comparison is desired, it should be with other available accounting techniques for price level changes. CCA method gives better results than all such other techniques.

vi) Ignores Purchasing Power Gains and Losses on the Monetary Items

CCA method ignores purchasing power gains and losses on the monetary items of the firm. Such gains and losses are in the nature of cost of holding monetary assets and liabilities during a period of changing price levels. They are of immense importance to companies whose assets and liabilities are mostly monetary in nature. Such companies would gain or lose in terms of purchasing power very heavily on the monetary balances in periods of changing price levels.

The CCA method is based on this presumption that firms use uniform accounting methods and practices. It also assumes that firms maintain plant registers on uniform basis. However, this is not true in actual practice. The accounting methods and practices, maintaining of plant registers differ from firm to firm. Moreover, in many cases, the plant registers are either incomplete or fail to provide adequate information required for valuation purposes.

On account of the above limitations of the CCA system, many accountants have begun doubting the capacity of the system to depict the true financial position of business during the periods of changing price levels. The following remark of Professor Baxter correctly explains the dilemma faced by the accountants " because of inflation the old pattern must change abruptly. Accountants have been ordered to take a great leap forward. They are being pressed to bring in a big reform for which their tradition and training fit them poorly. They are to choose between strange concepts and learn novel techniques. For comparability, they must squeeze the same reform on to all types of business. They are being exhorted to hurry, yet they know that a false move will do much harm to business, to investors and to their own profession. Small wonder they are rattled and rebellious".

16.6 ADJUSTMENTS / PROVISIONS

The following adjustments/provisions are generally made under CCA system;

C = Closing balance of MMW

la = Average index number for the period

lo = Index number appropriate to opening MWC

lc = Index number appropriate to closing MWC

Gearing Adjustment

Finally, under Current Cost Accounting System, there is also a "Gearing Adjustment". This is necessary because a part of the net operating assets are financed by borrowing which are to be repaid in the same monetary amounts irrespective of changes in prices. For the purpose of Gearing Adjustment, the term "Shareholders' Funds", refers to all funds belonging to the shareholders on the basis of current cost accounting. While the term, "Borrowings" refers to "Net Borrowings" representing the excess of:

- a. The aggregate of overall current assets other than those subject to a cost of sales adjustment and those included within monetary working capital and other than those which are, in substance, equity capital.

Examples : debentures, loans, provisions for tax, etc.

Over

The aggregate of overall current assets other than those subject to a cost of sale adjustment and those included within monetary working capital.

Examples: Cash and bank balances and marketable securities

Since the total operating capital comprises net borrowings and equity funds, the gearing adjustment can be made on the basis of the following formula:

$$\text{Gearing Adjustment} = \frac{B}{B + S}$$

Illustration - 5

From the following data, compute "Cost of sales adjustment"

	HCA	Price Index
Stock on 1 st January, 1991	Rs. 10,000	180
Purchase during 1991	30,000	198
Stock as on 31 st December, 1991	12,500	220

Solution

Computation of cost of sales Adjustment under CCA Method

	CCA Rs.	HCA Rs.
Opening stock as on 1-1-1991 [10,000 × 198/180]	11,000	10,000
Add: Purchases	30,000	30,000
	41,000	40,000
Less: Closing stock as on 31-12-1991 [12,500 × 198 / 220]	11,250	12,500
	29,750	27,500

Cost of sales Adjustment [COSA] 29,750 - 27,500 - 2,250

Illustration - 7

Calculate the cost of 'sales Adjustment' [COSA] from the following under CCA method:

	Historical Cost Rs.	Index No.
Opening Stock	50,000	100
Purchases 1,80,000	120	
Total Goods	2,30,000	[Average]
Less : Closing Stock	84,000	140
Cost of sales	1,46,000	

Solution

$$a) \text{ COSA} = (C - O) - I_a \left(\frac{C}{I_c} - \frac{O}{I_o} \right)$$

Where, C = Historical Cost of closing Stock

O = Historical cost of opening stock

I_a = Average Index Number

I_c = Index number appropriate to closing stock

I_o = Index number appropriate to opening stock

$$\begin{aligned} \text{COSA} &= (84,000 - 50,000) - 120 \left(\frac{84,000}{140} - \frac{50,000}{100} \right) \\ &= 34,000 - 120(600 - 500) \\ &= 34,000 - 12,000 \\ &= \text{Rs. } 22,000 \end{aligned}$$

Alternatively

Opening stock at average index = 50,000 X = $\frac{120}{140}$	60,000
Add: Purchases at average index	1,80,000
	<hr/>
	2,40,000
	<hr/>
Less: Closing stock at average index = 84,000 X = $\frac{120}{140}$	72,000
	<hr/>
	1,68,000
	<hr/>

Taxation	1,500	1,400
Cash	[5,000]	[8,400]
	19,500	15,400
ii. Share Capital and Reserve from current cost Balance sheet	37,080	47,056
Current Cost Balance Sheet	37,080	47,056
Proposed Dividend	500	600
Total Shareholders' Interest	37,580	47,656
iii. Current Cost Adjustment		1,700
Depreciation		1,800
Fixed Assets Disposal		1,620
Cost of Sales Adjustment		1,120
Monetary Working Capital Adjustment		6,240

Find out

- Gearing Adjustment Ratio, and
- Current Cost Adjustment after allowing gearing adjustment.

16.7 SUMMARY

The recording of business transactions under the assumption that monetary unit is stable is known as historical accounting. Under historical accounting assets are recorded by the business at the price at which they are acquired and the liabilities are recorded at the amounts contracted for. But monetary unit is never stable and all countries developed, developing and under-developed have been experiencing high rates of inflation. As a prelude to the study of inflation accounting, the limitations of conventional accounting are discussed. The two methods of inflation accounting are Current Purchasing Power Method and Current cost Accounting Method. Limitation CCA include inadequate backlog depreciation, lack of funds for replacement, inadequate gearing adjustment, materiality factor, subjective element and ignores purchasing power gain and loss and the monetary items. Adjustment and provision under CCA includes revaluation adjustments, depreciation adjustment, cost of sales adjustment, monetary working capital and gearing adjustment to provide a comprehensive understanding on the subject matter to the students simple problems on inflation accounting are presented in this unit.

16.8 MODEL ANSWERS TO ACTIVITIES

1. (a) CPP Value at the end of 1998:

$$\frac{10,000 \times 132}{100} = \text{Rs. } 12,000$$

- CPP Value at the end of 1999:

$$\frac{10,000 \times 145.2}{110} = \text{Rs. } 13,200$$

16.9 SELF ASSESSMENT QUESTIONS

A. Short Answer Questions

1. What are the limitations of conventional accounting?
2. What is inflation accounting?
3. State the salient features of inflation accounting.
4. Explain the need for inflation accounting.
5. Distinguish between monetary and non-monetary items.
6. What are the limitations of CPP method.
7. Explain the CPP method.
8. What is CCA Method?
9. What are the features of CCA?
10. State the limitations of CCA.
11. Write a note on Monetary Working Capital Adjustment.
12. Explain Gearing Adjustment.
13. What is Cost of Sales Adjustment?

B. Long Answer Questions

1. Discuss in detail the methods of Inflation Accounting.
2. What is price level accounting? what does it seek to achieve which financial accounting fails to achieve?
3. "Accounts ignore inflation and inflation makes a mockery of them" Explain.
4. What is CCA? Discuss its applicability in the highly volatile situation in an economy.
5. "Owing to change in purchasing power of money, the balance sheet figures, if based on historical cost, cannot give a true and fair view of the affairs of business". Explain.
6. What approaches have generally been recommended for dealing with the problems of changes in the purchasing power of money? which one is the best? Give reasons in brief.
7. Explain the adjustments to be made under CCA.
8. What do you mean by inflation accounting? Enumerate its advantages and disadvantages.
9. Describe the CPP Accounting.
10. What are the defects of historical accounting system in a period of inflation?

The general price index was as follows:

On January	90
Average for the year	110
On July 1	120
On December 31	120

You are required to compute the General Purchasing Power, Gain or Loss for the year stated in terms of current year end rupee.

(Ans: Purchasing Power Loss Rs. 18,000)

4. From the following comparative balance sheet of Jai Ltd. As prepared according to current Cost Accounting Method, you are required to calculate the "Gearing Ratio"

Comparative Balance Sheet

Liabilities	1990 Rs.	1991 Rs.	Assets	1990 Rs.	1991 Rs.
Share Capital	50,000	50,000	Fixed Assets[Net]	1,20,000	1,40,000
General Reserve	25,000	30,000	Inventories Accounts	50,000	65,000
Current cost	50,000	60,000	Receivable	80,000	90,000
Accounts Receivable					
Secured Loans	58,000	88,000	Prepaid Expenses	1,000	1,000
Account payable	50,000	46,000	Cash	5,000	7,000
Provision for taxation	15,500	20,000			
Proposed Dividend	7,500	9,000			
	2,56,000	3,03,000		2,56,000	3,03,000

(Ans: Gearing Ratio 37.06)

5. From the following information restate the amount of sales in terms of 1990 indices:

Year	Unadjusted sales	Average Price Index
1988	Rs. 10, 00, 000	80
1989	Rs. 12, 00, 000	100
1990	Rs. 13, 80, 000	120

The price index at the end of 1990 is 130.

(Ans: Adjusted Sales

1988	-	16,25,000
1989	-	15,60,000
1990	-	14,95,000)

- Inflation Accounting** : Inflation accounting is a system for accounting which purports to record as a built-in mechanism all economic events in terms of current cost.
- Current Purchasing Power Accounting:** It is based on the same principles as historical cost accounting, except that instead of using the unit of money [rupee], a unit of constant purchasing power [CPP] is used. All items in the financial statements are expressed in units of CPP.
- Monetary Items** : Monetary items remain fixed in terms of the current rupee regardless of what happens to the general price level. Examples of monetary items are cash, bank deposits, bills receivables, bills payable, creditors, book debts, outstanding expenses, prepaid expenses etc.
- Non-Monetary Items** : All other items of the financial statements not falling under monetary group are non-monetary in nature.
- Current Cost Accounting** : Under this method, various items [such as inventory and fixed assets] are measured in terms of prices prevailing at the end of the current period, and related expenses [such as cost of goods sold and depreciation] in terms of average prices during the period.
- Cost of Sales Adjustment** : The difference in value, which is debited before deriving the operating profit to Profit & Loss Account and credited to Current Cost Accounting Reserve Account.
- Monetary Working Capital Adjustment [MWCA]** : The aggregate of accounts receivable and prepayments less accounts payable and accruals.
- Gearing Ratio** : The relation between borrowed funds and shareholders' funds.

17.0 INTRODUCTION

Accounting is the language of business. It is the science of recording business events which are primarily of a financial character; and the art of making summary, analysis and interpretations of business transactions and communicating the results to persons, who make decisions and form judgements on the basis of such information. Recently, it has been widely recognised that business should provide information to customers, financiers, government, employees, community and public at large that how far it has accomplished its social responsibility. So, there is a growing shift of emphasis from financial accounting to social accounting. In this respect ONGC stated in its report: "The time was when an organisation was tested on economic viability. Today the same organisation, more so when in public sector, is to justify its existence more on its ability to discharge its social responsibility rather than its economic viability, which function though very significantly important is not the only test. In the world of today, an organisation's traditional objective of earning profit has been vehemently challenged on the ground that corporate entities must add to the well-being of society in a positive way apart from earning profits".

Social accounting can be defined as the application of accounting in the field of social sciences, "whereas economists have long used it to mean National Income Accounting. More recently, however, the term has been used in connection with the Corporate Reporting." "Social Accounting is a term, which covers a range of ideas, many of which are at a very early stage of development. At its simplest, it involves reporting, largely on an ad hoc basis, on individual items which may be of greater importance for their social impact than for their financial effects on the company." In this unit, we will discuss various aspects of social accounting.

17.1 MEANING AND DEFINITION OF SOCIAL ACCOUNTING

Corporate Social Accounting (CSA) is the deviation of traditional financial accounting. Traditional accounting is primarily depicting the profit and incomes and financial position of business enterprise, while Corporate Social Accounting is the systematic analysis and measurement of social obligations of business enterprise for the society and for human well-being and social life of the community.

Many definitions have been given by the different scholars and experts in the field of corporate social accounting.

Social Accounting is "an extension of the traditional concept of accounting and accountability to a different domain-social rather than financial performance". In its version, corporate social accounting is the development of accounting. Financial accounting exhibits the Income Statement and Balance Sheet whereas, corporate social accounting exhibits the social accounts of an enterprise – **Esteyn, Flamholz and Mc. Donouch.**

In the Kohler's Dictionary for Accountants, corporate social accounting has been defined as "the application of Double-Entry Book Keeping to Socio-Economic Analysis: it is concerned with the construction of National or Internal Balance Sheets and the design of the system of the component accounts". In the corporate social accounts the rules and principles of Double Entry are applied for the analysis and interpretation of socio-economic effects of the business enterprise to the community and society. A Balance Sheet is prepared and exhibited in the annual reports of the enterprise item-wise and component-wise.

"The concept of Social Accounting is of recent origin, and is studied in the context of measuring and reporting on the impact of a business firm upon society and the typical

George A. Steiner and H.R. Bown use the term social audit for social accounting and maintain that social audit is a report of social performance in contrast with the financial report which is concerned with economic performance. The term "Social Responsibility Accounting" or simply "Social Responsibility" is often used for social accounting, though it is not possible to provide an exhaustive list of the parties to whom the business firm is responsible but "a company has a responsibility to provide security of employment with fair wages. Equal opportunity for personal growth and advancement within the company is a requirement of justice. The means of securing efficient management, collective bargaining and representation by a trade unions are the workers' rights. Responsibility to the consumer means setting up and maintaining standards of quality and service, in addition to fair price. These are best set by the enterprise itself or through a trade association. But where enterprise and trade association fail, the state must act to protect the consumer. Standards of quality, and quality control and conduct need to be raised and when raised they should be maintained."

Social accounting is that branch of accounting which is concerned with the functioning of economic system as a whole. It may be considered as the accounting for community. The areas covered by social accounting include 'pollution control', 'equal employment opportunity', 'charitable contributions', 'community relations', 'produced quality', 'plant safety', 'employee benefits and responsiveness to consumer complaints'. The concept of social accounting is not the application of a new set of accounting rules and procedures. In this field of accounting the same basic principles of enterprise accounting are applied. Salvary explained it as 'the expansion of the existing boundaries of the accounting beyond the normal economic consequences to include economic consequences which the conventional systems not considered. The environment created by the Second World War brought a real impetus to the development of such type of accounting, the means by which the effect of social programmes are attempted to be expressed in some type of quantitative terms.

17.3 NEED FOR SOCIAL ACCOUNTING INFORMATION

Social accounting information of business enterprises is mainly useful to the management, shareholders, other investors, governments and society as a whole; and it has a great impact on the share price of the company. In a company, the top management especially the chief executive officer needs social accounting information to answer the various questions raised by shareholders and to ensure that policies adopted by the company are properly followed. The directors of the company need to know 'what sort of social programmes the company is having and what result it is getting'. They also need complete information about the effects of the company on society. This information can be obtained from social accounting and reporting. Social accounting and reporting are also needed by the present and potential investors by large institutions and individuals. It is also useful to external entities – public interest groups, government agencies, the media – interested in evaluating the total impact of an organisation on society.

The Trueblood Committee Report observes that 'an objective of financial statements is to report on the enterprise affecting society which can be determined and described or measured and which are important to the role of the enterprise in its social environment'. With the help of conventional accounting, it is not possible to fulfil this type of objective. So, it is necessary to introduce social accounting system in the field of accounting.

17.4 OBJECTIVES OF SOCIAL ACCOUNTING

The objective of corporate social accounting is to inform the general public about social welfare measures and activities taken by the unit enterprise, and their effects on the society. It

- iv) Each identity has to subordinate its self-interest to the interest of superior identity. Thus, individual interest is subordinate to group interest and group interest to organisational interest, and organisational interest to social interest.
- v) Each identity respects rights of other identities and avoids taking undue benefit denying the legitimate rights of other entities.
- vi) Constant as well as periodic application of SRA is made.

Principles

The principles underlying the social accounting are as follows:

- i) List planned activities which are consistent with the main objective of maximisation of social interest or well-being.
- ii) List required inputs to carryout planned activities in such a manner that it avoids avoidable costs to other identities and does not militate against the main objective of maximisation of social well-being.
- iii) List process / processes to be adopted avoiding avoidable costs to other identities and society.
- iv) Operate/function in such a manner that net contribution is optimised from a wider social context.
- v) Measure value-added and ensure that it is distributed in a fair and equitable manner, keeping in view the contributions made by various identities, their mutual rights and obligations.

17.6 APPROACHES TO SOCIAL ACCOUNTING

A number of approaches or techniques ranging from narrative or descriptive to preparation of purely quantified statements have been suggested by various researchers and theorists for reporting corporate social performance. These approaches can be broadly classified into four categories.

Inventory Approach

The business enterprise discloses all its social activities in purely descriptive form. An inventory listing has some informational value and operationally it would not be difficult to develop, but it has two major drawbacks. First, the list could be endless since in one way or the other most activities of an enterprise can be construed as being socially relevant. Second, comparison between business firms would be extremely difficult because no standard can be used to measure the company's social awareness except on the basis of how well the company explained its social activities.

Cost or Outlay Approach

In this approach besides listing the socially relevant activities of an enterprise, the amount spent on each activity is also reported. Information of a quantitative but non-financial nature may also be presented. This approach, though appears to have much more merits than the inventory approach in the sense that it provides a means for making some comparisons between business enterprises. It suffers from the limitation that high amount spent on social activities may not mean excellent benefits e.g. high expenditures on health care does not mean more benefits.

'social benefits' and negative aspects as 'social costs'. The net social contribution of a firm is represented by the difference between social benefits and social costs. This approach suggests that a firm should prepare a Social Statement periodically showing the expenditure made for 'improvement in social areas, offset the cost of programmes which were not undertaken but which would have resulted in improvements'.

Typical basic guidelines for the preparation of SEOS are :

- i) If a socially beneficial action is required by enforceable law or union regulations, it is not included in the SEOS.
- ii) If a socially beneficial action is required by law but is ignored; the cost of such item is a "detriment" for the year. The same treatment is given to an item if postponed, even with government approval.
- iii) A prorated portion of salaries and related expenses of personnel who spend time in socially beneficial actions or with social organisations is included.
- iv) Cash and product contributions to social institutions are included.
- v) The cost of setting up facilities for the general good of employees or the public, if done voluntarily without union or government mandate, is included.
- vi) Expenditures made voluntarily for the installation of safety devices on the premises or in products and not required by law or other contract are included.
- vii) Neglecting to install safety devices to protect employees or the public, where available at reasonable cost, is a "detriment".
- viii) The cost of voluntarily building a playground or nursery facility for employees and / or neighbours is included. Operating costs of the unit are also included for each succeeding year applicable.
- ix) The costs of re-landscaping strip-mining sites or other environmental eyesores, if not required by law, are included.
- x) Extra costs of designing and building business facilities to upgrade health, beauty or safety standards are included.

17.8 MAJOR AREAS OF CORPORATE SOCIAL PERFORMANCE

The National Association of Accounts (NAA) Committee has identified five major areas of corporate social performance, which are as follows:

Community Development

This includes society-oriented activities that are primarily benefiting the general public. Companies are expected to undertake activities like generating ancillary jobs and business, health services, rural and urban development programmes, support for educational institutions, developing cultural and recreational activities, employment to the handicapped, apprentice training and summer training to students, participating in flood / drought relief, giving donations / charities and the like.

- v) Social reporting; and
- vi) Accounting for public (governmental) programmes.

Activity -3

List out the major areas of social performance.

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17.9 ELEMENTS OF SOCIAL ACCOUNTING AND REPORTING

The following are the elements of corporate social accounting and reporting :

- i) Social income statement
 - ii) Social balance sheet
- i) **Social Income Statement:** It presents social benefits and costs to (a) employees, (b) the community, and (c) the general public. The format is presented below.

SOCIAL INCOME STATEMENT

	Rs.	Rs.
I. Social Benefits and Costs to the Staff		
A. Social Benefits to the Staff		
1. Medical and hospital facilities	x x x	
2. Township and housing facilities including concessional electricity and water supply	x x x	
3. Educational facilities	x x x	
4. Canteen facilities	x x x	
5. Recreation and cultural activities	x x x	
6. Concessional transport	x x x	
7. Training and development	x x x	
8. Holiday, leave encashment and leave travel benefits	x x x	
9. Provident fund and gratuity	x x x	
10. Bonus and insurance benefits	x x x	
11. Other benefits	x x x	
Total benefits to the staff	x x x	
B. Social Costs to the Staff		
1. Lay-off and involuntary terminations	x x x	
2. Extra hours worked by executives voluntarily but not paid	x x x	
Total costs to the staff	x x x	
X : Net social income / deficits to the staff (A-B)		x x x

ii) **Social Balance Sheet** : It presents the real status of all social assets and liabilities.

The format is presented below.

SOCIAL BALANCE SHEET

LIABILITIES	RS.	ASSETS	RS.
1. Organisational equity 2. Social equity		1. Social capital investment a. Township land b. Buildings i) Township (residential) ii) Canteen buildings c. Township water supply and sewerage d. Township roads e. Township electrification 2. Other social assets a. Hospital equipment b. Hospital vehicles / ambulances c. School equipment d. Club equipment e. Playgrounds / parks f. School buses g. Others	

17.10 BENEFITS OF SOCIAL ACCOUNTING

The following several benefits may be realised by an organisation by Social Accounting and Reporting:

- i) Presentation of a complete picture to the society and the management enables everybody to form correct opinions
- ii) Assist management in formulating appropriate policies and priorities
- iii) Avoidance of adverse publicity
- iv) Improved image leading to greater customer support
- v) Help in marketing and greater customer support
- vi) Evidence of social commitment
- vii) Improved employee motivation
- viii) Better business with all concerned e.g., Banks, Insurance, Government, etc.
- ix) Resolution of social problems can assist in long term growth of the organization

17.12 SOCIAL REPORTING IN INDIAN SCENE

In India corporate social reporting has not been widely practised. It is the Indian Companies Act, 1956 which requires the auditor to make a report, under section 227, to the members and express an opinion whether the company's balance sheet and profit and loss account exhibit a "true and fair view" of the company's state of affairs. In order to curb and deal with corporate abuses and malpractices, the Government has tried its best to amend the Act from time to time. The Central Government also issued the Manufacturing and Other Companies (Auditor's Report) Order, 1975.

A further impetus to social reporting was given by the Sachar Committee, which observed that the acceptance of the concept of social responsibility must be reflected in the information and disclosures that the company makes available for the benefit of its various constituents like its shareholders, creditors, workers and the community. A provision may be made in the Companies Act that every company, along with the Director's Report, shall give a social report which will indicate and quantify, in as precise and clear terms as possible, activities relating to social responsibility which have been carried out by it in the previous year. The ICAI also encourages companies to report their social performance in their annual reports, as it gives awards for the best presented annual reports every year considering social accounts as one of the criteria. The Board for Public Enterprises also requires the public sector companies to disclose the expenditure incurred by them on social overheads.

17.13 SUMMARY

Social Accounting is a term, which covers a range of ideas, many of which are at a very early stage of development. At its simplest, it involves reporting, largely on an ad hoc basis, on individual items which may be of greater importance for their social impact than for their financial effects on the company. The term social accounting is in the process of crystallization. So a variety of terms are in vogue to convey the same meaning viz., 'Social Reporting', 'Social Accounting', 'Social Disclosure', 'Social Audit', 'Social Responsibility Accounting', 'Social Information System', 'Socio-Economic Accounting'. These terms are used more or less interchangeably as they broadly convey the same meaning. Social Accounting is based on social cost benefit analysis (SCBA). Social cost is the external cost which the society bears, rather than the owners of a firm. Social accounting is that branch of accounting, which is concerned with the functioning of economic system as a whole. It may be considered as the accounting for community. The areas covered by social accounting include 'pollution control', 'equal employment opportunity', 'charitable contributions', 'community relations', 'produced quality', 'plant safety', 'employee benefits and responsiveness to consumer complaints'.

Social Accounting Information of business enterprises is mainly useful to the management, shareholders, other investors, governments and society as a whole; and it has a great impact on the share price of the company. The objective of corporate social accounting is to inform the general public about social welfare measures and activities taken by the unit enterprise, and their effects on the society. It tells how far the enterprise is successful in fulfilling the social obligations. A number of approaches or techniques ranging from narrative or descriptive to preparation of purely quantified statements have been suggested by various researchers and theorists for reporting corporate social performance. Social reporting models developed by social researchers include Abt's model, Professor L.S. Porwal and Narendra Sharma model, socio-economic operating statement approach. Major areas of corporate social performance include community development, human resources, product or service contribution, physical resources and environmental contribution, and general information. Several companies are realising

17.16 FURTHER READINGS

- Glantier, M.W.E. : **Business Accounting in a Changing Society – Accounting Theory and Practice**, A.H. Publishers, New Delhi.
- Jawaharlal : **Contemporary Accounting Issues**, Vision Books, New Delhi, 1988.
- Khandelwal, M.C. and Sujan, C.J. : **Social Accounting**, Printer Publishers, Jaipur, 1993.
- Kishore, R.M. : **Advanced Management Accounting**, Taxman Allied Pvt. Services Ltd., New Delhi, 1997.
- Ralph, W.E. : **Corporate Social Accounting**, John Wiley and Sons, New York, 1976.
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17.17 KEY WORDS

- Social Accounting** : A measurement and reporting of information concerning the impact on entity and its activities on society.
- Social Profit** : Excess of social benefits received by the society from a business firm over the social costs borne by the society attributable to the same firm.
- Social Reporting** : Reporting on those activities of the organisation that have an impact on the society at large but are not necessarily represented by its traditional financial report.
- Social Income Statement** : It presents social benefits and costs to (a) employees, (b) the community and (c) the general public.
- Social Balance Sheet** : It presents the real status of all social assets and liabilities.

organisation. In the case of a profit-making organisation, it is an investment centre or a profit centre or a cost centre. In the case of a non-profit making organization, it is an area of responsibility such as a functional department. There are several ways in which an organisation can segment itself e.g. geographical, product line, classes of business, demographic and psychographic. It is common for profit making organisations to use geographical and product line classification. In this unit, various aspects of segment reporting are discussed.

18.1 MEANING OF SEGMENT REPORTING

Various professional accounting bodies defined the term "Segment". The American Institute of Certified Public Accountants (AICPA) in its IAB opinion Number 30, Reporting the Result of Operations, defined a Segment of a Business as "A component of an entity whose activities represent a separate major line of business or class of customers. A Segment may be in the form of a Subsidiary or Division, or a Department, and in some cases a Joint Venture or Other Non-subsidiary Investee, provided that its assets, results of operations and activities can be clearly distinguished, physically and operationally and for financial reporting purposes, from the other assets results of operations, and activities of the entity". The US Accounting Standard FASB Statement No. 14 "Financial Reporting for segment of a business enterprise defines a reportable segment as "A component of an enterprise engaged in providing a product or service or a group of related products and services primarily to unaffiliated customers (i.e. customers outside the enterprise) for a profit". International Accounting Standard (IAS) 14 "Reporting Financial Information by Segments" requires the (i) enterprise whose securities publicly traded, and (ii) other economically significant entities including subsidiaries to release financial information by industry segment and geography segment. Industry segments are the distinguishable component of an enterprise each engaged in providing a different product or service, or a different group of related product or services, primarily to customers outside the enterprise. Geographical segments are the distinguishable component of an enterprise engaged in operations in individual countries or a group of countries within particular geographical areas as may be determined to be appropriate in an enterprise's particular circumstances.

In some cases a segment refers to a particular line of business and in some cases it refers to a geographical area. The basic purpose of segment reporting is to assess whether a segment manager is achieving his/her targets and to provide for a more informed investment or credit decision which, in turn, should result in a more efficient allocation of investor or creditor resources. IAS-14 as issued by International Accounting Standards Committee (IASC) considered two types of segmentation viz., Business Segment and Geographical Segment.

Activity - 1

What is Segment Reporting?

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18.2 NEED FOR SEGMENT REPORTING

It is now strongly felt that enterprises whose securities are publicly traded and other economically significant entities should disclose, as a supplement to the traditional statements, certain significant financial information for the industry segments and geographical segments. The various industry segments or geographic areas of operations of the company can have different rates of profitability, different levels and type of risk and different opportunities for

encouraged by disclosure of profits by segment. Consumers may also benefit from the competition that may result.

Government

Governments (at national and international level) are becoming increasingly concerned by the activities of large companies and the balance of payments. Segmental disclosures by geographical location seem likely to promote a better understanding of corporate strategy and its impact and will, thus, provide a more reliable base for governmental policy making. Furthermore, legislation relating to mergers and acquisitions and competition policy seems likely to be more effective if based on more comprehensive information.

Activity - 2

How is segment reporting useful?

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18.3 BASES OF SEGMENTATION

The objective of presenting information by segments is to provide users of financial statements with information on the relative size, profit, contribution and growth trend of different industries and different geographical areas in which a diversified enterprise operates to enable them to make more information-based judgements about the enterprise as a whole. The appropriate base of segment depends mainly on the nature of the business organization and its size. In fact, the accounting functions and reporting thereof, are the outcome of different segments, which actually vary from one business to another on which segmentation has been made. Information about the bases used in the preparation of segmental reporting enhances the users' understanding of the resulting data. Generally, the following bases are accepted for segmentation.

- i) **Product Line:** When a business organisation is involved in the production and sale of different types of products to meet the various needs of the same customers residing in a particular locality.
- ii) **Customer Type:** When a businesses organisation is involved in the production and sale of a particular type of product to meet the different types of customers of a particular locality or of different areas.
- iii) **Geographical Location:** When the production and sale of goods and services have been developed on the basis of geographical location of the consumers.

Para 21 of International Accounting Standard (IAS) 14 requires the reporting entity to describe the activities of each industry segment and to indicate the composition of each geographical area. Again for better accounting and reporting, composite basis can also be adopted for segmentation purpose, e.g. product line as well as geographical area basis.

Activity - 3

What are the bases of segmentation?

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- vii) Depreciation and amortisation expense by business segment.
- viii) Non-cash expenses other than depreciation and amortisation by business segment.
- ix) Reconciliation of revenue result, assets and liabilities by business segment.

In addition to the above stated disclosures, there are certain other disclosures as required by AS-17.

Legal Requirement of Segment Reporting under Indian Companies Act, 1956

Under Indian Companies Act 1956, Part-II of Schedule VI requires certain disaggregated information regarding amount and quantities of turnover by each class of goods, regarding item-wise break up of the value and quantities of raw materials consumed by a manufacturing company, regarding the value and quantities of opening and closing stocks of finished goods by each class of manufacturing company, regarding value and quantities of the purchases, opening and closing stock by each class of goods traded by a trading company, and qualitative information about licensed and installed capacities and actual production of each class of goods.

18.6 LIMITATIONS OF SEGMENT REPORTING

Following are the main objections of segmental reporting:

- i) Success of segmental reporting depends on inter departmental transfer pricing, but the main difficulty of transfer pricing is that it is not well established.
- ii) It is difficult to analyse segment-wise performance ratio.
- iii) There are some problems of allocation of segment-wise expenses.
- iv) It is argued that segmental revenue and expenses are not distinguishable.
- v) Some companies believe that due to segmental reporting secrets of the company will be disclosed.
- vi) Various classification systems of segmental reporting create confusion in the minds of the users.
- vii) The adoption of different pricing will make the segment disclosure not comparable with similar disclosures by enterprise.
- viii) It is difficult to distribute the common cost to segmental reporting.
- ix) It is difficult to compute return on assets which are utilised for more than one segments.
- x) There is a possibility of arbitrary allocation of joint cost.

18.7 PROBLEMS OF SEGMENT REPORTING

The following are the problems associated with segment reporting :

Competitive Damage

Presenting the results of segment operations could lead to competitive damage. Competitors may learn valuable information about profit margins and new product lines, and thus, competitors may invade the company's most lucrative market. In this regard, The International Accounting Standards Committee observes that "Disclosing information about segments may weaken an enterprise's competitive position because more detailed information is made avail-

Activity - 4

List out the problems of Segment Reporting.

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18.8 SEGMENT REPORTING IN INDIAN SCENARIO

The practice as well as legal requirement of reporting aggregate financial information by diversified companies is not an effective mode of communicating periodic accounting numbers to the users of accounts. Public disclosure of financial information on a "less than total enterprise" basis is a global practice although nature and degree of such disclosures vary from country to country. Today in USA, Canada, UK and Australia segment reporting is common in the financial reporting packages of companies which are diversified by product line and geographical area. Even in Pakistan the segment disclosure is required if turnover of a segment exceeds 20% of the turnover of the company. In India a study conducted by an expert revealed that 95% of academics and 93% of professionals are in favour of segment reporting. In other words, there has been an increasing demand for desegregated information. This study also revealed that 74% in case of academics and 79% in case of professionals are of the opinion that 20% of turnover of a firm should be taken as the threshold for segment reporting.

Requirements of Companies Act Regarding Disclosure : In India, Part II of Schedule VI to the Companies Act, 1956, requires certain desegregated information. Such disclosure requirement inter alia include:

- i) Disclosure of the amount and quantities of turnover by each class of goods;
- ii) Disclosure of item-wise break-up of the value of quantities of raw materials consumed by a manufacturing company;
- iii) Disclosure of the value and quantities of the purchases, opening and closing stocks by each class of goods traded by a trading company;
- iv) Disclosure of the quantitative information about licensed and installed capacities, and actual production by each class of goods.

In India, very few companies (both public and private sector) like Infosys Technologies Limited, Satyam Computers Limited, SAIL, etc. have made attempts to disclose segmental information in partial compliance of the requirements of the US GAAP and SEC disclosures norms. These companies have provided only revenue information by geographical and business segment.

The ICAI has issued Accounting Standard-17 relating to 'Segment Reporting' and it will be mandatory, in respect of accounting period commencing on after 01-04-2001 for the following:

- i) Enterprises whose equity or debt securities are listed on a recognised stock exchange in India, and enterprises that are in the process of issuing equity or debt securities that will be listed on a recognised stock exchange in India as evidenced by the board of directors resolution in this regard.
- ii) All other commercial, industrial and business reporting enterprises, whose turnover for the accounting period exceeds Rs. 50 crores.

its risk - return-future prospects and growth, which is more useful to the users of financial reports. Usually the product line, customer type and geographical location are accepted as bases for segmentation. Accounting Standards Board (ASB) of the Institute of Chartered Accountants of India (ICAI) has issued Accounting Standard 17 (AS-17) on "Segment Reporting" and is mandatory for specified enterprises in respect of accounting periods commencing on or after 1.4-2001. The problems of segment reporting include competitive damage, unreliable, misunderstanding, irrelevant, misleading results, segments classification, reportable segments and apportionment of common cost. The practice as well as legal requirement of reporting aggregate financial information by diversified companies in India is not an effective mode of communicating periodic accounting numbers to the users of accounts. Public disclosure of financial information on a "less than total enterprise" basis is a global practice although nature and degree of such disclosures vary from country to country. Today, in USA, Canada, UK and Australia segment reporting is commonplace in the financial reporting packages of companies which are diversified by product line and geographical area.

18.10 MODEL ANSWERS TO ACTIVITIES

1. Business segment refers to a component of an entity whose activities represent a separate major line of business or class of customer. Segment reporting is defined as disclosing the business activities on segment-wise based on the way a business enterprise is managed. This type of segmentation is called industry segment.
2. The bases for segmentation include product line, customer type and geographical location. Product line base of segmentation is used for sale of different types of products to meet the various needs of the same customers, while customer type is accepted to sell particular type of product to meet the different types of customers, of a particular locality or of different areas. Geographical location base is accepted when sales of goods or services have been developed on the basis of geographical location of the consumers.
3. Segment reporting provides more detailed information for the various products and turnover of the business. It is highly essential to the shareholders and investors for the technical analysis. The creditors can assess liquidity of the enterprise through segment reporting. Segment reporting helps to judge actual financial condition of any business understanding.
4. The problems of segment reporting include competitive damage, unreliable, misunderstanding, irrelevant, misleading results, classification of segments and reportable segments, apportionment of common cost.

18.11 SELF ASSESSMENT QUESTIONS

A. Short Answer Questions

1. Define Segment Report.
2. Explain the need and importance of Segment Reporting.
3. Outline the objectives of Segment Reporting.
4. List out the bases of Segmentation.

B. Long Answer Questions

1. Write a note on major standards of Segment Reporting.

UNIT - 19 : VALUE ADDED REPORTING

Aims and Objectives

This unit is devoted to discuss different aspects of value added reporting.

After studying this unit, you should be able to :

- explain the meaning and concept of Value Added;
- explain the features of Value Added;
- calculate the Value Added;
- state the significance and formats of Value Added Statement;
- identify the advantages and disadvantages of Value Added Statement;
- recognise the problems associated in the preparation of Value Added Statement;
- explain the meaning and functions of Economic Value Added;
- trace out the problems associated with the calculation of Economic Value Added;
- review the Economic Value Added Reporting in Indian Context.

Structure

- 19.0 Introduction
- 19.1 What is Value Added ?
 - 19.1.1 Generation of Value Added
 - 19.1.2 Application of Value Added
- 19.2 Features of Value Added
- 19.3 Methods of Computation of Value Added
- 19.4 Value Added Statement
 - 19.4.1 Assumptions of Value Added Statement
 - 19.4.2 Significance of Value Added Statement
 - 19.4.3 Value Added Statement – Formats
- 19.5 Profit and Loss Account and Value Added Statement
- 19.6 Advantages of Value Added Statement
- 19.7 Problems in preparation of Value Added Statement
- 19.8 Economic Value Added
- 19.9 What does Economic Value Added show ?
- 19.10 Functions of Economic Value Added
- 19.11 Problems of Economic Value Added
- 19.12 Economic Value Added Reporting in Indian Context
- 19.13 Summary

considering Value Added we are assessing the wealth that has been created by an entity in its entirety all its machines, labour, its management and capital.

Value Added is the excess of sales revenue plus income from other sources over the cost of bought in goods and services purchased from outsiders.

“The increase in market value resulting from an alteration in the form, location or availability of a product or service excluding the cost bought materials and services”.

There are two schools of thought one advocating gross value added, and the other net value added.

Gross Value Added

The excess of turnover plus income from services over the cost of bought-in-materials and services is termed as ‘gross value added’.

Net Value Added

The annual charge of depreciation is deducted from the gross value added and the remainder is known as “net value added”. In the opinion of another school, the excess of turnover plus income from services over the cost of bought in materials and services is termed as ‘value added’ and the annual charge of value added available to the owners of the concern is in the form of retained earnings.

19.1.1 GENERATION OF VALUE ADDED

The value added is the increase in the market value brought by an alteration in the form, location or availability of a product or services, excluding the cost of bought-in materials or services used in that product or service. In other words, the value added is an excess of turnover plus income from services over the cost of bought in materials and cost of services.

Turnover

The word ‘turnover’ means the gross sale of goods plus sales tax and duties minus the amount of rebates, returns, commission, discounts and goods used for self consumption, etc. The word ‘income from services’ represents income in the form of dividends from subsidiary companies, rents, compensations and other miscellaneous income less scrap, etc.

Cost of Bought-in Materials

The word ‘cost of bought-in materials’ consumed includes the cost of materials purchased and consumed during the year. This figure should be further adjusted for the addition of work-in-progress and finished goods.

Cost of Services

The term ‘cost of services’ represents the cost of services paid for external agencies for using the facilities offered by them. The employees' costs, excise duty and depreciation have not been included in the cost of bought-in-materials and services.

Non-Value Added Items

There are certain non-value added items appear on the debit and credit side of profit and loss account of an enterprise i.e., profit / loss on sale of investments and fixed assets, provision for bad and doubtful debts, provision for taxation, non-operating expenses like donations, etc. These items should be treated carefully.

Customer Satisfaction

Added value is determined by the satisfaction of the customer, not by the work of a manufacturer or producer.

Non-marketed Activities

In non-marketed activities, such as hospital and educational institute, when a doctor enhances the health of a patient, both the individual and society benefit from the service. When a teacher inculcates knowledge and devotes skills in the pupils, both the individual and society benefit from the service. In this sense, medical and education services can be said to generate wealth. Of course, it is not wealth in the sense of a manufactured product or a materials possession. Nevertheless, these services help to raise the standard of living. But when these services are financed by taxation, it is easy to measure the 'added value'. If there is no 'profit' or 'loss', it is difficult to know whether the added value created is greater or less than the sum total of the costs involved.

Measure of Wealth

Value added or added value is a measure of the wealth created by a business or industry.

Measure of the Net Output

Value added fundamentally differs from sales revenue because it excludes the wealth created by the suppliers of the businesses. Thus, added value is a measure of the net output rather than the gross output of a factory, company, industry, or even a country.

Elimination of double Counting

Added value overcomes the problem of double counting as the outputs of several businesses are added together. Making a garment starts with the farmer who grows the wool or cotton. The raw materials passes through the hands of the spinner, the weaver, the dyer and printer, the cloth manufacturer, the retailer and all the intermediate transport operators. If the added value figures for all the businesses are added together, there is little or no double counting. The sum total of their added value figures represents the wealth created by the collective efforts of the business.

Activity - 2

Specify the features of Value Added?

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19.3 METHODS OF CALCULATING VALUE ADDED

Value added can be measured in terms of the difference between sales and purchases. The gap between what a business charges for its product and what it pays for the raw materials and other purchases represents the value added to the materials by the processes or production.

B.Cox has suggested two methods viz., additive method and subtractive method to calculate value added.

$$\text{Value Added} = a - b - c + d + e + f$$

Where,

- a = Turnover;
- b = Bought in materials and services;
- c = Employee wages and other benefits;
- d = Dividend and interest payable;
- e = Tax payable; and
- f = Amount retained

19.4 VALUE ADDED STATEMENT (VAS)

Value Added Statement reveals the value added by an enterprise. David Pendril defines VAS as "the statement which shows the income of the company as an entity and how that is divided between the people who have contributed to its creation."

Value added statement is a voluntary corporate supplementary statement in India. It shows a broad measure of performance of a corporate entity and is one of the recent suggestions of the value added statement. The ASSC report is concerned with the specification of income attributable to employees, government, and the providers of capital. It is thus, an extension of the Income Statement, regarding the earnings or profits in business as a cooperative effort.

19.4.1 ASSUMPTIONS OF VALUE ADDED STATEMENT

The assumptions underlying the preparation of value added statement are :

- i) VAS is no substitute but a supplement to the profit and loss account;
- ii) VAS is based on items and figures obtained in the profit and loss account and the accounting concept remain the same in the preparation of VAS;
- iii) It is different from profit and loss account to the extent, the latter contains the non-value added debits and credits like provisions, non-trading losses, appropriations as well as non-trading incomes like profit on sale of scrap, interest on securities, dividend, etc.

19.4.2 SIGNIFICANCE OF VALUE ADDED STATEMENT

Value Added Statement shows how the wealth generated by a firm is shared among its employees, investors, lenders, Government and the future, i.e., retained earnings. The preparation of VAS is significant from the nation point of view as the contribution made by a firm to the 'wealth of nation' is to be measured in terms of value added by it. The disclosure of VAS is significant from 'social reporting' point of view. It has been considered as an important step towards social reporting. It reveals the growth of a corporate organisation in terms of social accounting or social business income or profit as value added. VAS forms a crucial part of social responsibilities of the business. This statement depicts an account of value productivity at the micro-level business economics. The VAS shows the value created, added or generated and

Electricity

Repairs to plant & buildings

xxx

xxx

xxx

d) Cost of Services

Audit Fees

xxx

Insurance

xxx

Rent, Rates, etc.

xxx

Travelling expenses

xxx

Advertisement

xxx

Postage & Telegram

xxx

Printing

xxx

Subscriptions

xxx

Carriage outwards

xxx

Other expenses

xxx

xxx

Added Value Created (a + b - c - d)

xxxx

DISTRIBUTION OF VALUE ADDED

a) To Employees

Wages and Salaries

xxx

MD's Remuneration

xxx

Directors Sitting fees, etc.

xxx

Contribution to P.F., ESI and other benefits

xxx

Staff welfare, etc.

xxx

xxx

b) To Government

Customs duty

xxx

Excise duty

xxx

Sales tax

xxx

Income tax

xxx

Wealth tax

xxx

Rates and taxes etc.

xxx

xxx

Less: Subsidising on export etc.

xxx

xxx

c) To Providers of Capital

Interest on bank borrowings

xxx

Interest on term loans

xxx

Interest on debentures

xxx

Interest others

xxx

Dividends

xxx

xxx

d) Retained in Business

Depreciation

xxx

Retained profit

xxx

xxx

Disposal of Total Value Added (a + b + c + d)

xxxx

19.6 ADVANTAGES OF VALUE ADDED STATEMENT

Value added reporting is not only useful for external purposes but also for internal decision making and performance measurement. The following are some of the uses of value added reporting:

i) Comparison of performance

Value added is an alternative performance measure to profit. Value added is superior performance measure because it bounces attention on inputs controllable by management. Changes in material prices are usually not controllable by management and value added by deducting material costs allows attention to be diverted at more controllable items.

ii) Productivity Measurement

Useful productivity measures can be devised in corporate value added. Examples of productivity measurement are :

- i) Value added per rupee of capital employed
- ii) Value added per rupee of sales
- iii) Value added per rupee of labour cost
- iv) Value added per employee
- v) Value added per labour / machine hour

iii) Resource Allocation

Resource allocation decisions are normally based on the concept of maximising profit. Value added may however be a more appropriate criterion because it incorporates the reward to employees as well as to providers of capital. For profit maximisation, rankings in resource allocation are based on contribution per unit of the limiting factor and for value added, maximisation of profit is often an emotive one and employees may well find the concept of 'creating wealth or adding value more acceptable. One of the significant uses of the concept of value added is its incorporation in company incentive schemes or bonus schemes. The schemes work by establishing a base ratio of value added to payroll costs thereby creating a base index. If the index moves favourably in later periods, a bonus is payable to the scheme members. There are two principle methods of using the base index to calculate bonuses. Under the first method, the company calculates a productivity ratio by relating value added to payroll costs. The second method uses a reciprocal of the productivity index and calculates an expected standard payroll cost for each Re.1 of value added.

iv) Value Added Ratio Analysis

It is useful to measure the overall performance of business through computation of ratios like gross margin, stock turnover, fixed assets turnover, labour productivity and capital productivity.

19.7 PROBLEMS IN PREPARATION OF VALUE ADDED STATEMENT

The following problems generally arise in preparation of value added statements.

19.9 WHAT DOES EVA SHOW ?

EVA is the residual income after charging the company for the cost of capital provided by lenders and shareholders. It represents the value added to the shareholders by generating operating profits in excess of the cost of capital employed in the business. EVA indicates the impact on shareholders wealth, whereas other traditional performance measures such as, IRR, ROI, Return on Capital Employed, Return on Assets, Return on Net Assets, etc. indicate the rate of return. ROI and other traditional performance measures ignore the definite requirement that the rate of return should be at least as high as the cost of capital. Sometimes, ROI ignores projects yielding more than the cost of capital just because the return happens to be less than their current return. The above concept can be well understood with the help of an example, Let us suppose that a group has two companies, "PQR" Ltd and "XYZ" Ltd.

	PQR Ltd	XYZ Ltd
Cost of capital	18%	12%
ROI	18%	10%

The group aims at maximizing only ROI. In this case, PQR Ltd. will reject all the projects that yield a return below 18%; Whereas, XYZ Ltd. will accept all the projects with a yield of more than 10% (even if it is as low as 11%). In the above example, both the companies will maximize its ROI, at the same time, it decreases the shareholders value. To create and increase the shareholder value, PQR Ltd. should have accepted all the projects with a return of over 12%. But XYZ Ltd. should not accept any projects below 12%, because this would destroy shareholder value.

EVA will increase if -

- i) Operating profits can be made to grow without employing more capital i.e. greater efficiently.
- ii) Additional capital is invested in projects that return more than the cost of obtaining new capital i.e., profitable growth,
- iii) Capital is curtailed in activities that do not cover the cost of capital i.e., liquidating unproductive capital.
- iv) Reducing cost of capital, which means employing more of debt, as debt is cheaper than equity or preference capital i.e., cost control.

Activity - 3

Explain the meaning of EVA

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19.10 FUNCTIONS OF ECONOMIC VALUE ADDED

The main functions of EVA are to serve as performance measure, and a corporate philosophy.

- i) Stern Stewart & Co. recommends nearly 164 adjustments to the accounting figures for a realistic estimate of EVA. These adjustments truly complicate the calculation of EVA. These 164 adjustments require indepth data. This involves additional costs.
- ii) The increase in the number of adjustments increase the subjectivity involved in measuring EVA.
- iii) It is very difficult to quantify all the value enhancement activities of a firm without involving a lot of subjective estimates.
- iv) It does not remove the limitations of the accounting profit that forms the basis for computing EVA.
- v) It is difficult to measure exactly the risk-free rate of return, beta and risk premium.
- vi) There is no statutory regulation to monitor the EVA disclosure practices in India.

19.12 EVA REPORTING IN INDIAN CONTEXT

Hindustan Lever Ltd.

In Hindustan Lever, the goal of sustainable long-term value creation for its shareholders is well understood by all the business groups. Measures to evaluate business performance and to set targets take into account the concept of value creation.

EVA Trends : 1997-2001 (Unaudited)

(Rs. In crores)

S.No.	1997	1998	1999	2000	2001	
Cost of Capital Employed (COCE)						
1	Average Debt	160	165	162	93	50
2	Average Equity	1127	1487	1908	2296	2766
3	Average Capital employed 1+2	1287	1652	2070	2389	2816
4	Cost of Debt, post-tax %	8.82	9.10	8.61	8.46	7.72
5	Cost of Equity %	19.70	19.70	19.70	19.70	19.70
6	Weighted Average Cost of Capital % (WACC)	18.34	18.64	18.83	19.27	16.54
7	COCE: (3) x (6)	236	308	390	460	406
		1997	1998	1999	2000	2001
Economic Value Added (EVA)						
8	Profit after tax, before exceptional items	580	837	1070	1310	1541
9	Add : Interest, after taxes	21	19	14	8	5
10	Net Operating Profits After Taxes (NOPAT)	601	856	1084	1318	1546
11	COCE, as per (7) above	(236)	(308)	(390)	(460)	(466)
12	EVA : (10)-(11)	365	548	694	858	1080

Notes

1. The cost of equity is calculated by using the following formula :
Return on risk-free investment + expected risk premium on equity investment adjusted for the average beta-variant for software stocks in US.
2. The figures are based on Indian GAAP statements.

SATYAM COMPUTER SERVICES LIMITED

EVA is residual income after charging the Company for the cost of capital provided by lenders and shareholders. It represents the value added to the shareholders' wealth by generating operation profits in excess of cost of capital employed in the business.

EVA = Net Operating Profit After Tax (NOPAT) before Interest less Weighted Average Cost of Capital (WACC)

Statement showing calculation of Economic Value Added :

(Rs. In lakhs)

S.No.		31-3-2000	31-03-2001	31-3-2002
1	Profit Before Tax *	14086.43	33573.81	52526.15
2	Less : Tax	600.08	1957.45	3513.30
3	Add : Financial Expenses	**4067.31	3451.42	959.30
4	Net Operating Profit After Tax (NOPAT)	17553.66	35067.78	49972.38
5	Less : Cost of Capital	9221.53	18325.68	32961.00
	Economic Value Added (EVA)	8332.13	16742.10	17011.38

* Excluding Non-Recurring Income

** Regrouped

For the purpose of above calculation the Cost of Equity (for 2001-02) has been arrived at in the following manner :

Return on Risk-free Investment	7.5%
Expected Risk-free Premium on Equity Investment	8%
Beta variant	2.01
Adjusted Expected Premium (8% * 2.01)	16.08%
Cost of Equity (7.5% + 16.08)	23.58%

Weighted Average cost of Capital for the year worked out to 22.57% as against 22.54% last year.

to the shareholders by generating operating profits in excess of the cost of capital employed in the business. EVA indicates the impact on shareholders wealth, whereas other traditional performance measures such as, IRR, ROI, Return on capital employed, Return on assets, Return on net assets, etc., indicate the rate of return. The main functions of Economic Value Added are to measure performance and to align the interests of the shareholders with managers. The core problem associated with the calculation of EVA is to measure the exactly risk-free rate of return, beta and risk premium. Further, there is no statutory regulation to monitor the Economic Value Added disclosure practices in India.

19.14 MODEL ANSWERS TO ACTIVITIES

1. Value Added is referred to as the increase in market value resulting from an alteration in the form, location or availability of a product or service excluded the cost of goods and services purchased from outside. In other words, Value Added is the excess of sales revenue plus income from other sources over the cost of bought in goods and services purchased from outsiders.
2. The features of Value Added include generation of Value Added, monetary / non-monetary transactions, customer satisfaction, non-marketed activities, measure of wealth, measure of the net output and elimination of double counting.
3. Economic Value Added is the net result when cost of capital employed is deducted from net operating profit after taxes. In other words EVA is the residual income after charging the company for the cost of capital provided by lenders and shareholders. It indicates the effect on shareholders wealth.
4. The problems associated with the calculation of EVA are :
 - i) It is very difficult to quantify all the value enhancement activities of a firm without involving a lot of subjective estimates.
 - ii) It does not remove the limitations of the accounting profit that forms the basis for computing EVA.
 - iii) It is difficult to measure exactly the risk-free rate of return, beta and risk premium.

19.15 SELF ASSESSMENT QUESTIONS

A. Short Answer Questions

1. What is Value Added ?
2. Outline the features of Value Added.
3. What are the methods used for computing Value Added ?
4. Distinguish between Value Added Statement and Profit and Loss Account.
5. What is Economic Value Added ?
6. What are the main functions of Economic Value Added ?
7. What does EVA show?

UNIT - 20 : HARMONIZATION OF FINANCIAL REPORTING

Aims and Objectives

This unit aims at discussing several important aspects pertaining to harmonization of financial reporting such as the need for harmonization, diversity in accounting practices, standardisation at international level and obstacles to harmonization.

After studying this unit, you should be able to :

- explain the meaning of harmonization;
- highlight the need for harmonization;
- identify the causes for diversity in financial reporting;
- describe the standard setting activities at international level;
- explain the benefits of harmonization; and
- examine the factors hindering the harmonization process..

Structure

- 20.0 Introduction
- 20.1 Meaning of Harmonization
- 20.2 Standardisation Vs. Harmonization
- 20.3 Need for Harmonization
- 20.4 Causes for Diversity in Financial Reporting
- 20.5 Development of Standards at International Level
- 20.6 Benefits of Harmonization
- 20.7 Obstacles to Harmonization
- 20.8 Summary
- 20.9 Model Answers to Activities
- 20.10 Self Assessment Questions
- 20.11 Further Readings
- 20.12 Key Words

20.0 INTRODUCTION

There have been dramatic developments in the world economic environment on account of liberalisation, privatisation and globalisation of business operations. The removal of trade barriers and restrictions on capital flows in major economically developed countries have given rise to rapid expansion in the activities and operations of multinational companies and globalisation of financial markets. Differential accounting systems impose the problems to those who operate in global securities markets either as investors or as seekers of capital. Harmonization in accounting practices is intended to overcome these problems. It fosters the international comparability of accounts and standardises the reporting practices.

Activity - 1

What is accounting harmonization?

Activity - 2

Distinguish between harmonization and standardisation.

20.3 NEED FOR HARMONIZATION

Accounting harmonization is not an end by itself, but it is a means to an end. The ultimate objective of harmonising accounting practices among countries is to foster international comparability of accounts. The following factors have necessitated the international accounting harmonization:

- i) The increasing globalisation of business operations has been the key factor responsible for bringing the harmonization in international accounting. Harmonization reduces the cross-border accounting barriers.
- ii) The emergence of market economy has substantially changed the structure of the world economy. It requires economic resource allocation on a world-wide basis. The harmonization of accounting leads to proper dissemination of financial information.
- iii) The rapid expansion of multinational companies is another important factor that necessitated the harmonization of accounting practices among countries. Inter-country diversity in accounting practices is a great concern for these companies as it creates many problems for them in the preparation and reporting of consolidated accounts.
- iv) The removal of restrictions on capital flows in major economically advanced countries has given rise to the globalisation of financial markets. The increasing globalisation of the markets for corporate securities is also responsible for intensifying the drive towards international harmonization in accounting. It provides a level-playing ground for the globalised securities markets.
- v) Harmonization is needed for the purpose of developing comparative accounting. The financial statements prepared in different countries with harmonised accounting standards will provide a common basis for meaningful comparisons among them.
- vi) International harmonization of accounting is needed for facilitating the process of global economic integration by removing barriers to the cross-border movement of goods, services and capital.

20.4 CAUSES FOR DIVERSITY IN FINANCIAL REPORTING

Accounting systems have developed in different countries under different sets of legal, economic, political, social and cultural conditions. This has led to the diversity in accounting

There are some countries, like USA, and many Common Wealth Countries, where the published accounts are prepared based on commercial rules, whereas accounts for taxation purposes are prepared in compliance with taxation rules. In such countries taxation rules have minor influence on published accounts. In some countries such as Germany and France, the tax accounts are the same as the commercial accounts. Taxation rules exert a greater influence on accounting practices in these countries. Thus, financial reporting practices may be influenced by taxation rules in some countries.

v) **Inflationary Pressures**

Inflation has become more or less a permanent feature in most of the countries of the world. There are, however, significant variations among countries in regard to the extent of their exposure to the inflation. Some countries experience very high rates of inflation, while others have been able to keep such rates within some manageable limits. The countries that suffer from severe and chronic inflation have to introduce various adjustment mechanisms which call for either a complete restatement of the figures contained in the basic financial statements or modification of some key figures of such statements. Thus, there may be variations in the presentation of financial information among different countries.

vi) **Accounting Theory**

Accounting practices are influenced by accounting theories in a variety of ways. The accounting theories can be divided into three broad categories viz., descriptive theories, normative theories and empirical theories. Descriptive accounting theories are concerned with describing observed accounting practices. Normative theories influence the form and content of published accounts. The empirical accounting theories are concerned with examining how the capital market reacts to the accounting information disseminated by companies for the use of outside parties. Accounting theories have not advanced uniformly among various countries and thereby diversity in accounting practices exists among various countries.

vii) **Cultural Characteristics**

There exists a close connection between culture and accounting. Many of the variations in accounting practices among the countries in the world can be explained by cultural differences. Many of the key elements of accounting practice are influenced by cultural aspects. The meanings of certain important concepts like wealth, capital, profit, revenue and expenses differ among cultures. The measurement of periodic profits and valuation of assets and liabilities is influenced by the degree of conservatism prevailing in a particular culture. The orientation of a society towards secrecy can substantially influence the way statutory financial audit is conducted. Reliability of published accounting reports depends greatly on the value orientations of those responsible for managing the affairs of the companies.

viii) The stage of economic development of a country can be an important influential factor in determining the state of accounting development of that country.

ix) Accounting practices can also differ between countries depending on the general level of their education.

x) Other factors capable of causing intercountry accounting differences include geographical proximity, exposure to international trade and commerce, presence of multinationals and colonial influences.

IAS 9	Research & Development Costs (superseded by IAS 38)	--	AS 8
IAS 10*	Contingencies and events Occurring After the Balance Sheet Date (partly superseded by IAS 37)	1.1.2000	AS 4 (revised)
IAS 11*	Construction Contracts (revised 1993)	1.1.1995	AS 7
IAS 12*	Accounting for Taxes on Income (revised 1996)	1.1.1981	AS 22
IAS 13	Replaced by revised IAS 1	--	--
IAS 14*	Segment Reporting (revised 1997)	1.7.1998	AS 17
IAS 15	Information Reflecting the Effect of Changing Prices (not mandatory)	1.1.1983	--
IAS 16*	Property, Plant & Equipment (revised 1998)	1.1.1995	AS 10
IAS 17*	Leases (revised 1993)	1.1.1999	AS 19
IAS 18	Revenue (revised 1993)	1.1.1995	AS 9
IAS 19*	Employee Benefits (revised 1998)	1.1.1999	AS 15
IAS 20*	Accounting for Government Grants and Disclosure of Government Assistance (reformatted 1994)	1.1.1984	AS 12
IAS 21*	The Effects of Changes in Foreign Exchange Rates (revised 1998)	1.1.1995	AS 11 (revised)
IAS 22*	Business Combinations (revised 1998)	1.7.1998	AS 14
IAS 23*	Borrowing Costs (revised 1993)	1.1.1995	AS 16
IAS 24*	Related Party Disclosures (reformatted 1994)	1.1.1986	AS 18
IAS 25	Accounting for Investments (reformatted 1994)	1.1.1987	AS 13
IAS 26	Accounting and Reporting by Retirement Benefit Plans (reformatted 1994)	1.1.1988	--
IAS 27*	Consolidated Financial Statements and Accounting for the Investment in Subsidiaries (reformatted 1994)	1.1.1990	AS 21
IAS 28*	Accounting for Investments in Associates (reformatted 1994)	1.1.1990	AS 23
IAS 29*	Financial Reporting in Hyperinflationary Economies (reformatted 1994)	1.1.1990	--
IAS 30*	Disclosures in the Financial Statements of Banks and Similar Financial Institutions	1.1.1991	--
IAS 31*	Financial Reporting of Interests in Joint Ventures (revised 1998)	1.1.1992	AS 27
IAS 32*	Financial Instruments : Disclosure and Presentation (revised 1998)	1.1.1996	--

national standards. In UK, Accounting Standards Board (ASB), the national standards setting body carefully studies every exposure draft and tries to incorporate, to the extent possible, the contents of IASs in their national standards. In other countries like Japan, where the government has a dominant influence on company reporting, the move has been towards permitting the companies to report in compliance with IASs.

The Securities and Exchange Commission (SEC) of USA has accepted the IASs conditionally. It has been critical of the organisational arrangement of IASC. In US foreign companies are permitted to file their accounts with the SEC on the basis of IAS only if they provide also a reconciliation of net income and shareholders' equity from IAS to US GAAP. Such reconciliations are contrary to the principle of harmonization and defeats its object. For this reason, the financial reporting world has been waiting for the SEC to accept the IASs without requiring reconciliations. However the US SEC has recently confirmed its proposed endorsement of IAS-7 dealing with cash flows. It has also expressed its intention to endorse several other IASC endorsements. If this is materialised, it will significantly reduce the financial reporting burdens being faced by the non-US companies wishing to issue their shares on US stock exchanges.

International Accounting Standards Board (IASB)

An important problem of the IASC was its standard-setting process. In order to overcome this problem, the IASC has brought in reforms in the structural arrangement of standard-setting. In March, 2001, the IASC Foundation was formed as a not-for-profit corporation in the State of Delaware, USA. The IASC was reshuffled into a new organisation, the International Accounting Standards Board. It is an independent, privately funded accounting standard-setter based in London, UK. It is committed to developing, in the public interest, a single set of high quality, understandable and enforceable global accounting standards that require transparent and comparable information in general purpose financial statements. In addition, the IASB Co-operates with national accounting standard-setters to achieve convergence in accounting standards around the world.

Effective 1 April, 2001, the IASB assumed accounting standards - setting responsibilities from its predecessor body, IASC. This was the culmination of a restructuring based on the recommendations of the report on 'Recommendations on Shaping IASC for the Future'. The IASB was preceded by the IASC, which operated from 1973 until 2001.

The restructuring of IASC would go a long way in overcoming many of the concerns of the SEC as well as IOSCO. The IASB has to continue from where the IASC left off and to provide a stable and robust regime for the on-going maintenance and development of high quality global accounting standards. It has received an important vote of confidence from Europe. In the European Union by 2005 all the publicly treated EU incorporated companies will have to follow the International Financial Reports Standards (IFRSs) of the IASB. Individual EU countries will have the option to extend this requirements to unlisted companies also.

IASB publishes its standards is a series of pronouncements called International Financial Reporting Standards. It has also adopted the body of standards issued by IASC. Those pronouncements continue to be designated as "IASs". It also publishes a series of interpretations of IASs developed by the International Financial Reporting Interpretations Committee and approved by the IASB. So far the IASB has issued 5 IFRSs shown below:

- IFRS - 1 : First time adoption of International Finance Reporting Standards
- IFRS - 2 : Share Based Payment
- IFRS - 3 : Business Combinations

to be favoured by the new International Accounting Standards Board, and therefore could find its way into International Accounting Standards.

The paper's proposals are both far-reaching and radical: it calls for the initial and subsequent measurement of all financial instruments at their fair value, with all changes in fair value being shown in the income statement in the periods in which they arise, whether or not realised. The potential impact of these proposals is made all the more significant by the fact that there is no intention to allow any special hedge accounting.

The definition of a financial instrument is extremely broad, and includes all derivative financial instruments that are currently off balance sheet. Not only is a company's own long-term debt included in this fair value model, but it is proposed that its fair valuation should incorporate changes in the reporting entity's own credit rating. Thus, were a company's credit rating to fall it would recognise a profit; similarly, in the case of a company that has issued long-term fixed rate debt, if interest rates rise sharply, the accounts of the company will show a large profit.

Framework for the Preparation and Presentation of Financial Statements

The Framework is a conceptual accounting. Framework that sets out the concepts that underlie the preparation and presentation of financial statements for external users. It was approved in 1989 by the IASB's predecessor, the board of IASC, and adopted by the IASB in April 2001. The Framework assists the IASB.

- i) in the development of future International Financial Reporting Standards and in its review of existing Standards; and
- ii) in promoting the harmonization of regulations, financial reporting standards and procedures relating to the presentation of financial statements by providing a basis for reducing the number of alternative accounting treatments permitted by International Financial Reporting Standards.

In addition, the Framework may assist:

- i) national standard-setting bodies in developing national standards;
- ii) preparers of financial statements in applying International Financial Reporting Standards and in dealing with topics that have yet to form the subject of an International Financial Reporting Standard;
- iii) Auditors in forming an opinion as to whether financial statements conform with International Financial Reporting Standards;
- iv) users of financial statements in interpreting the information contained in financial statements prepared in conformity with International Financial Reporting Standards; and
- v) those who are interested in the work of IASB, providing them with information about its approach to the formulation of International Financial Reporting Standards.

The Framework is not an International Financial Reporting Standard and does not define standards for any particular measurement or disclosure issue.

In a limited number of cases there may be a conflict between the Framework and a requirement within an International Financial Reporting Standard. In those cases where there is a conflict, the requirements of the International Financial Reporting Standard prevail over those of the Framework.

ent countries. Since the investors are interested in securing the highest possible rate of return on their investments, they make a comparative analysis of the published accounts of various companies with a view to exploring all available alternatives. Harmonization of international accounting will help the investors to take their investment decision on a global basis. This also facilitated the free flow of private capital across national boundaries.

ii) Multinational Companies

These companies are the major beneficiaries of international accounting harmonization with diversity in accounting practices from country to country. These companies face a variety of accounting requirements from the countries in which they operate. The burden of this financial reporting would be lessened with increased harmonization which would simplify the process of preparing the financial statements. These companies will also be able to effect substantial savings in their accounting costs if national difference in accounting practices are reduced or eliminated. Consolidation of accounts of overseas subsidiaries would be easier due to harmonization as financial statements from all over the world can be prepared on the same basis. These companies raise money in more than one country and in international markets. As such, they need to produce accounts which can easily be understood by investors in many countries. This job is made easy and possible with international accounting harmonization. These companies also find easy to transfer the accounting staff from one country to another.

iii) International Accounting Firms

National accounting differences cause great problems for these firms operating internationally. Harmonization of accounting practices among different countries in the world will help the international accounting firms to serve their clients with transnational operations in a more effective way. They can also have increased mobility of accounting staff. International accounting firms will also be able to derive considerable benefits if international harmonization of accounting standards and practices is accompanied by a mutual recognition of professional accounting qualifications.

iv) International Business Firms

Companies seeking listing of their securities in the stock exchanges of other countries would benefit much from international accounting harmonization. Such companies are required to provide supplementary information in addition to the financial statements prepared in conformity with domestic accounting and reporting requirements. There are many countries which required overseas companies seeking listing facilities to produce financial statements in accordance with the GAAP applicable to their own domestic companies. Harmonization of accounting and reporting requirements among countries throughout the world will enable these companies to increase the quantum of their transnational listings.

v) Stock Market Regulators

Stock market regulators are expected to gain much from international accounting harmonization. The main function of these agencies is to ensure the protection of investors in corporate securities. They have to ensure that the investors are provided with the information necessary to make proper assessment of the risks and returns attributes of the securities traded in securities markets. The companies which fail to produce their financial statements in accordance with the GAAP have to face delisting from the regulators. Stock market regulations in the countries where foreign securities are traded have to face the arduous task of mastering the diverse accounting standards and principles of different countries. Harmonization of international accounting will avoid this problem of the regularots if the IASs are accepted for the preparation and presentation of financial statements by the listed companies.

iv) Nationalism

The nationalism acts as a great impediment to international accounting harmonization. Many countries resist the drive towards harmonization because they perceive this process as the imposition of standards by economically advanced countries. This is described as accounting colonialism or accounting imperialism. The international bodies of accounting standard setters have tried to dispel the fear of accounting imperialism by advocating it as international viability. In the present day globalization scenario such feelings will not be a major obstacle to international accounting harmonization.

v) Difficulties in the Development of Standards

Standard formulation requires a basic theory. In accounting there has not yet developed any single universally accepted basic theory. Instead, a large number of alternative theories have been developed. The theories are constructed based on certain assumptions concerning the environment of business. As the environments of business differ from country to country, it is difficult to develop a theory which is universally applicable. The same problem arises with respect to the development of global standards. The differences in purposes of financial statements will lead to different views of accountants about the accounting treatment. There are gaps in many respects including the evolution of accounting system between the developed countries and developing countries. As such it is difficult to develop universally applicable accounting standards. The implementation of accounting standards have economic consequences. Accounting standards creating a severe adverse impact on the bottom lines of companies are likely to face resistance from company managements even if such standards are conceptually found, the economic consequences have led to politicising the environment of accounting standard-setting. As a result the credibility of the accounting standards may be lost.

vi) Difficulties in Enforcement

Certain difficulties may hinder the enforcement of accounting standards. In many countries of the world, companies are required to draw up one set of financial statements only serving both tax purposes and financial reporting purposes. In such a situation the business is more concerned about tax saving than reporting accurate information. In implementing the IASs their tax implications are studied. The governments may oppose the standards that would reduce profits and business may oppose the standards that would boost profits. Another difficulty relates to the laws regulating the financial reporting. The IASs are to be incorporated in the disclosure laws of different countries for their enforcement. In most countries the law makers are not interested in making these changes. In many countries, their standard setting bodies have developed the national standards. As there are chances of conflict between the IASs and national standards, the national standard-setters are unable to compromise on the enforcement of IASs in such cases. Accounting standards are primarily applicable to companies with international operations. As such most of the domestic companies view that IASs are none of their business. The poor adherence to the IASs may be due to the fact that IASs has no real authority to implement its recommendation. It has to rely on the best efforts of individual members which most often are not the accounting standard-setting bodies of various countries. All these obstacles or hindrances have thwarted the attempts of harmonization in the past. But, the obstacles are now gradually receding and the harmonization process is advancing at a faster rate than in the past.

publishes its standards in a series of pronouncements called International Financial Reporting Standards. IFRs is considered as a global accounting language.

4. The main difficulties in the development of standards at international level are: (i) provincial outlook of many countries in the world; ii) differences in socioeconomic and legal environment in different countries; iii) wide divergences in world-wide accounting practices; iv) gaps in many areas between the developed and developing countries; and v) lack of universally accepted accounting theory.

20.10 SELF ASSESSMENT QUESTIONS

A. Short Answers Questions

1. Define harmonization of international accounting
2. "Harmonization does not imply complete uniformity", Explain.
3. Distinguish between harmonization and standardization.
4. Explain the need for harmonization of international accounting.
5. What is IFAC?
6. What are the obstacles to harmonization of international accounting?
7. What are the objectives of IASB?

B. Long Answer Questions

1. Describe the efforts of IASC towards harmonization of accounting practices world-wide.
2. Describe the main obstacles in the harmonization of financial reporting.
3. Evaluate the IASC as standard-setter
4. Discuss the factors that have hindered the harmonization of international accounting.
5. Discuss the difficulties faced by the IASC in the process of bringing harmonization in accounting and reporting.
6. Discuss the steps taken at the international level for harmonization of financial reporting.
7. Discuss the need for harmonization of international accounting.

20.11 FURTHER READINGS

1. Saeed M. : **Corporate Financial Reporting**, Anmol Publications, New Delhi, 1990.
2. Porwal L.S. : **Accounting Theory - An Introduction**, Tata Mc Graw Hill, New Delhi, 1989.
3. Jawahar Lal : **Accounting Theory**, Himalaya Publishing House, Mumbai, 2003.

MODEL EXAMINATION QUESTION PAPER

FACULTY OF COMMERCE

M. COM. (PREVIOUS) EXAMINATION

SUBJECT : M. COM. (P)

COURSE - 2 : ACCOUNTING FOR MANAGEMENT

Time: 3 Hours

Max. Marks : 70

Min. Marks : 28

SECTION - A (Marks : $5 \times 4 = 20$)

Instructions to the candidates:

- i) Answer **any five** of the following questions.
- ii) Answer theory questions in about 10 lines each.
- iii) Each question carries 4 marks.

1. What are the functions of financial accounting?
2. Explain the scope of management accounting.
3. Explain briefly the statement of changes in owners' equity.
4. What is trend analysis?
5. From the following information find out:
 - a) Current Assets
 - b) Liquid Assets
 - c) InventoryCurrent Ratio 2.5 : 1; Acid-test Ratio 1.5 : 1; Current Liabilities Rs. 50,000.
6. What is Du-Pont chart?
7. From the following data, calculate the Break-even point in Rupces.
Selling price per unit Rs. 20; Variable manufacturing cost per unit Rs. 11, Variable selling cost per unit Rs. 3; Fixed factory overheads Rs. 5,40,000; and Fixed selling costs Rs. 2,52,000.
8. In the balance sheet the provision for taxation on 1-4-2003 was Rs. 1,50,000 and on 31-3-2004 was Rs. 1,60,000. Taxes paid during the year 2003-04 were Rs. 1,25,000. How do you treat the provision for taxation while preparing the funds flow statement?
9. Differentiate between internal reporting and external reporting.
10. What is EVA?

13. a) From the following particulars, prepare the Balance Sheet of a company.

Sales for the year	Rs. 20,00,000
Gross Profit Ratio	25%
Current Assets Ratio	1.5
Quick Assets Ratio	1.25 (cash and debtors)
Stock Turnover Ratio	15
Debtors Collection Period	1 1/2 months
Turnover to Fixed Assets	1.5
Ratio of Reserves to Share Capital	33% (i.e. 1/3)
Fixed Assets to Net Worth	0.83 (i.e. 5/6)

The term turnover means cost of sales and stock means closing stock.

OR

b) From the following information, prepare Funds Flow Statement.

Balance Sheets of Venu Ltd.
as at 31-3-2003 & 2004

Liabilities	2003 Rs.	2004 Rs.	Assets	2003 Rs.	2004 Rs.
Share Capital	10,00,000	12,50,000	Buildings	10,00,000	9,50,000
General Reserve	2,50,000	3,00,000	Plant	7,50,000	8,45,000
P&L A/c.	1,52,500	1,53,000	Stock	5,00,000	3,70,000
Bank Loan	3,50,000	2,00,000	Debtors	4,00,000	3,21,000
Creditors	7,50,000	4,76,000	Cash	2,500	3,000
Provision for Tax	1,50,000	1,75,000	Goodwill	--	65,000
	26,52,500	25,54,000		26,52,500	25,54,000

Additional Information:

	Rs.
a) Dividend Paid	1,15,000
b) Depreciation on plant	90,000
c) Income Tax paid during the year	1,65,000
d) Depreciation on building	50,000