

# UNIT I

## NOTES

### FINANCIAL ACCOUNTING

#### 1.1.1 Introduction

Accounting is a systematic process of recording all business transactions and presenting the net result and financial data in an organized manner to meet the demand of all interested parties. Over the years accounting has become a profession, with specialized branches within the broad field of accounting.

Following a proper system for pricing of material issues, valuation of inventory along with a sound depreciation accounting policy, increase the efficacy of accounts.

#### 1.1.2 Learning objectives

This chapter will enable the reader to:

- Comprehend what accounting is all about and its various branches, namely Financial Cost, Management and Human Resource accounting.
- Absorb the Meaning and Techniques used in Inflation Accounting.
- Understand Generally Accepted Accounting Principles, various concepts and conventions.
- Assimilate the entire accounting mechanism involving debit and credit, various types of accounts, and accounting cycle.
- Grasp the meaning and techniques of preparing Trading and Profit and Loss Account and Balance Sheet.
- Appreciate the methods of pricing of material issues and inventory valuation.
- Understand the meaning of depreciation and the methods of providing depreciation.

#### 1.1.3 Introduction to Financial, Cost and Management Accounting

A business is run with own money and borrowed funds. These are deployed over a variety of assets to run the show and earn profit.

Those who have contributed money and money's worth, employees and Government will be interested in knowing the profit earned by the business. Managers who run the

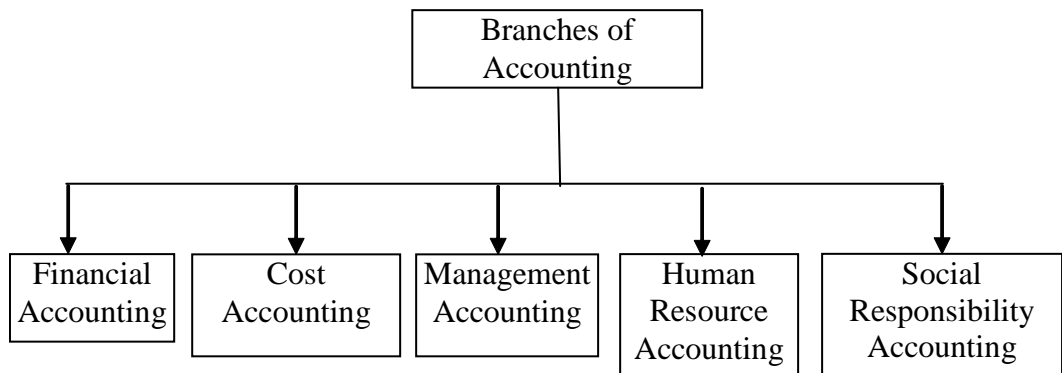
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enterprise would like to know, not only the profit, but also what the organisation owns and owes to others. Besides, they also need accounting information to make operational decisions and exercise control over the concern. To meet the above varying needs of different stake holders, Accounting was developed

Accounting is a process of systematic recording of all transactions and presenting the net result and pecuniary data in an organized way to meet the multiple information needs of all interested parties.

## 1.1.4 Branches of Accounting

The main object of Accounting is to tailor the available financial data according to the needs of various stake holders and communicating them to those who demand it. Modern business management has become highly complex. With the advancement of technology, increasing literacy rate, environmental concern, consumerism, entry of multi-national corporations, etc., managing a modern business has become highly complex demanding a wide variety of information. These have led to the development of several specialized fields or branches within the broad field of Accounting. They are depicted below.



A brief introduction [encompassing objectives, functions advantages and limitations] to each of the above is given below. Their operational mechanisms are taken up in subsequent sections.

## 1.1.5 Financial Accounting

Financial Accounting is concerned with recording all revenues and expenses, assets and liabilities of a business concern and ends up with the preparation of Trading and Profit and Loss Account [ to ascertain the profit/loss made ] and a Balance Sheet [to find out what the business owns and owes to others].

### Definition of Accounting

- The American Accounting Association defines accounting as “the process of identifying, measuring and communicating information to permit judgment and decisions by the users of accounts.

- According to American Institute of Certified Public Accountants, “Accounting is the art of recording, classifying and summarizing in a significant manner and in terms of money, transactions and events which are, in part at least, of a financial character, and interpreting the results thereof.

Shareholders, banks, financial institutions, creditor’s employees, management, government, etc. make use of the pecuniary information provided by Financial Accounting.

### **1.1.6 Functions or Process of Financial Accounting**

Accounting performs the following functions:

- **Recording:** As soon as a financial transaction takes place in an organisation, they are recorded in proper books of accounts [called Journal ] in chronological order.
- **Classification:** It is the process of grouping transactions of similar type under one head, called Accounts. This is done in a separate book called Ledger. Thus, each ledger account gives a complete picture of all happenings in relation to that particular account.
- **Summarising:** It is the process of presenting the classified data in an organized manner which is understandable and useful to all interested parties. This takes place in the form of Trial balance, Trading and Profit and Loss Account and Balance Sheet.
- **Interpreting:** The financial statements are analysed and interpreted in such a way that the end-users can judge the performance correctly and make informed decision regarding future course of action.

### **1.1.7 Objectives of Financial Accounting**

- To maintain accounting records.
- To calculate the result [ Profit or Loss] of operations by preparing income statement [called Profit and Loss Account].
- To ascertain the financial position by preparing position statement [called Balance Sheet] which shows the resources owned [called Assets] and the sources of such resources [called Liabilities].
- To provide information to external and internal users.

External users include investors, creditors, bank and Government. Investors are mainly interested in finding out the solvency and profitability position of an organisation. Creditors are interested in knowing the safety of their principal and receiving interest. Government needs information for tax assessment and granting subsidy.

Internal users include owners, employees and management. Owners are interested in knowing how their funds were used. Employees are interested in financial performance for seeking higher pay and bonus. Management requires information for Planning and controlling the operations of the enterprise.

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## 1.1.8 Advantages of Financial Accounting

- Maintains systematic record of all business transactions.
- Enable the user to find out whether the organisation has made profit or incurred loss during a specified period.
- Facilitates assessment of financial position of the concern.
- It provides the needed information to various interested groups.
- It can be used as authentic evidence in a court of law.
- Provides information for assessment and settlement of taxes like income tax, sales tax, etc.
- Helps the users in judging the financial performances of the concern correctly.
- Aids in making informed and sound decisions.

## 1.1.9 Limitations of Financial Accounting

- It records only those transactions which can be expressed in terms of money. It cannot measure qualitative factors like quality of personnel, soundness of management policies, quality of product or research and development, morale of employees, etc.
- It ignores changes in price level.
- Accounting uses estimates and subjective opinions of management and accountant. For example, amount of depreciation depends upon the estimated useful life of a machine. Similarly provision for bad debts and market value of stock in hand is influenced by subjective opinion. Hence, accounting results can at best be only approximately correct.
- There may be conflict between one accounting principle and other. For instance, according to the principle of conservatism, stocks are valued at cost or market price whichever is less. Thus, in one year stock may be valued at cost. But in the following year, it may be valued as market price. This goes against another accounting principle, namely Principle of consistency.
- It gives the results of operations already taken place. Hence is not of much use in judging the future profitability of the organisation.
- According to the cost concept, assets are recorded at the cost at which they are acquired. This does not reflect the true value of the asset, especially during an inflationary trend.

## 1.1.10 Cost Accounting

The limitations of Financial Accounting has led to the emergence of Cost Accounting. Cost Accounting is concerned with recording, classifying, allocating and apportioning expenses for determining the cost of products or services, and presenting data to the management for cost control and decision making.

**Definition of Cost Accounting**

According to the Chartered Institute of Management Accountants, London, Cost accounting is “the process of accounting for costs from the point at which the expenditure is incurred or committed to the establishment of its ultimate relationship with cost units. In its widest sense, it embraces the preparation of statistical data, the application of cost control methods and the ascertainment of the profitability of the activities carried out or planned.

**1.1.11 Functions of Cost Accounting**

- Determination of cost for a specific product or activity.
- Recording of cost in cost journal and their subsequent posting to ledger.
- Critical evaluation of cost information to assist the management in its planning and control function.
- Reporting of cost data to all concerned.

**1.1.12 Objectives of Cost Accounting**

- Ascertaining the cost of the products or services.
- Control cost by (i) establishing standard cost (ii) comparing actual cost against standard cost and (iii) analyzing the causes for their variation and taking corrective action.
- Another object of cost accounting is not only to control cost but also reduce them.
- Facilitate fixing of selling price.
- Help management in framing operating policies like
- Utilization of idle capacity.
- Make or buy decision.
- Production or discontinuation of a product.
- Export decisions etc.

**1.1.13 Advantages of Cost Accounting**

- Helps management in cost ascertainment, cost control and cost reduction.
- Aids in improving operational efficiency.
- Minimizes wastages.
- Helps in price fixation during depression, facing competition and in exporting goods.
- Effective inventory control through various inventory control techniques.
- Helps in selecting the right sales mix for increasing the profit.

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- Facilitates determination of Break-Even Point [BEP] through cost-volume-profit analysis.
- Serves as a check over the data provided by Financial Accounting.
- Helps in preparing estimates.
- Aids management in framing operating policies like make or buy decisions, continuation or discontinuation of a product, etc.

## 1.1.14 Limitations of Cost Accounting

- Installing a costing system is quiet expensive.
- They are mainly applicable in manufacturing concerns. Hence, it is not of much use for a trading organisation.
- Cost Accounting depends upon Financial Accounting for data. Any error in financial data will impact the accuracy of the costing data.
- It merely facilitates decision-making but does not make decisions.
- It entails a considerable amount of clerical work.

## 1.1.15 Difference between Financial and Cost Accounting

Financial Accounting	Cost Accounting
1) Seeks to prepare Profit and Loss Account and Balance Sheet to report to owners and outsiders.	1) Seeks to provide cost information to the Management for decision making.
2) Maintained as required by Companies Act and Income Tax Act.	2) Maintained as per the requirements of the Management.
3) Stocks are valued at cost or market price whichever is less.	3) Stocks are always valued at cost.
4) Reporting is done annually.	4) Cost reports may be prepared daily, weekly, monthly, etc., as per the needs of the Management.
5) Only actual costs incurred are recorded.	5) Uses actual as well as estimated costs.
6) Main emphasis is on finding out profit or loss.	6) Main emphasis is on cost control and cost reduction.

## 1.1.16 Management Accounting

Management Accounting is concerned with providing necessary information to the management in such a way as to enable it to discharge its management functions efficiently.

**Definition of Management Accounting**

The Chartered Institute of Management Accountants 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.

**1.1.17 Objectives and Functions of Management Accounting**

- Helps management in effective decision making and policy formulation.
- Aids in planning and forecasting.
- Facilitates exercising effective control throughout the organisation.
- Helps in organizing and coordinating the activities of various departments.
- Consider financial and non-financial information for making sound decisions.

**1.1.18 Tools and Techniques used by Management Accountant**

- Financial Accounting System.
- Analysis of financial statements.
- Budgetary control.
- Cost Accounting.
- Marginal Costing.
- Standard Costing.
- Fund Flow and Cash Flow analysis.
- Management Reporting.

**1.1.19 Advantages of Management Accounting**

- Ensures effective planning
- Facilitates performance evaluation.
- Exercises effective control over the entire organisation.
- Helps in making sound decisions.
- Contributes towards enhancing the efficiency of the organisation.
- Minimizes wastages.
- Makes efficient use of available resources.

**1.1.20 Limitations of Management Accounting**

- It derives information from Financial and Cost Accounts. Such information suffers from the limitation associated with Financial and Cost accounts.
- It merely supplies information for decision making but does not replace the role of management.

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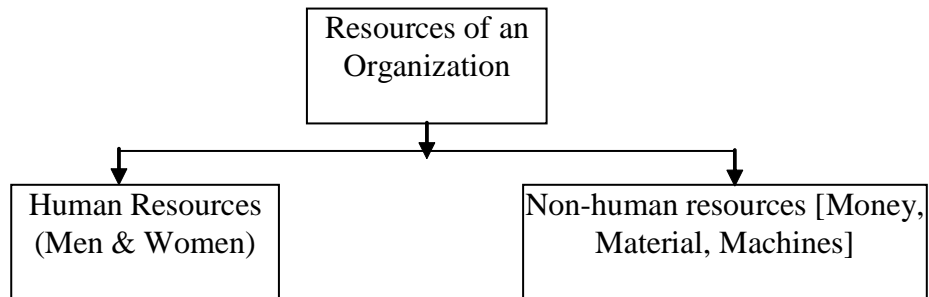
- Installation of Management Accounting System is expensive.
- Even though it uses quantitative and qualitative factors, it cannot replace the role of intuition in managerial decision making.

## 1.1.21 Difference between Cost and Management Accounting

Cost Accounting	Management Accounting
1) Main emphasis is on cost control and cost reduction.	1) Main emphasis is on providing information to Management for the efficient discharge of management functions.
2) Uses only quantitative data	2) Uses quantitative and qualitative data
3) It is based on historical and present data.	3) Deals with future projection based on past and present data.
4) It uses well established procedures and practices.	4) No such procedures and practices followed.
5) Scope is narrow, restricted to cost ascertainment, cost control and cost reduction.	5) Scope is much wider and includes financial and cost accounting.

## 1.1.22 Human Resource Accounting – Introduction and Meaning

Resources of an organisation can be broadly classified into human and non-human resources as show below:



Efficient utilization of non-human resources depends upon the quality of human resources. The fate of any organisation depends, not much upon the non-human resources [i.e. money, material and machines] it possess, but upon the quality of human resources which command the effective utilization of non-human resources. Thus, human resources constitute the most valuable resource of an organisation.

In the past, no attempt was made to value such human resources. The Endeavour to ascertain the monetary worth of human resources, led to the development of a separate accounting field called Human Resource Accounting [HRA].

**Meaning of HRA:**

HRA is concerned with valuing and presenting systematically the monetary worth of employees in an organisation.

**Definition of HRA**

American Accounting Association defines HRA as “the process of identifying and measuring data about human resources and communicating the information to interested parties”.

**1.1.23 Objectives of HRA**

Following are the objectives of HRA:-

- To assist management in acquiring, maintaining and developing human resources.
- To help management utilize the human resources effectively.
- To calculate the return on investment made in human resources.
- To communicate systematically the monetary worth of employees to the organisation and to the outsiders.

**1.1.24 Advantages of HRA**

- Helps management in making decisions in the following areas like recruiting, transfers, promotions, retrenchment, reducing labour turnover, training, etc.
- It makes the employee aware of the contribution he is making towards the profitability of the organisation. This helps him in improving his performance.
- Aids investors and financial analysts assess the future growth potential of an organisation.
- Enables management change their attitude towards laborers positively.
- Facilitates achievement of economic goals of an organisation in the economical way by efficiently using the non-human resources.

**1.1.25 Limitations of HRA**

- There is no universally accepted method for valuing human resources of a concern.
- HRA is not recognized by Tax laws.
- Many abstract factors are involved in the valuation of human resources. Such factors can neither be expressed nor be measured precisely in monetary units. Subjectivity comes to play. Thus HRA becomes subjective and lack preciseness.
- It is claimed that HRA helps in effective management of an organisation human resources. But this lacks empirical evidence.
- Indian Laws does not recognize human resource as an asset.

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- The duration of stay of any employee in an organisation is uncertain. This makes valuation of human resources unrealistic.

## 1.1.26 Methods for valuation of Human Resources

Following are the popular approaches suggested for valuation of human resources:

- **Historical Cost Approach:** This approach advocates that the cost of acquiring, training and developing the human resources of an organisation be capitalized and written off over the period for which the benefits are likely to accrue to the concern.
- **Replacement Cost Approach:** This method suggests that human assets should be valued at the cost that would be incurred to replace the existing human resources with new recruits of equal talent and skills.
- **Opportunity Cost Approach:** According to this approach, an employee is valued on the basis of his value in alternative uses, i.e. opportunity cost. The worth of an employee is ascertained depending upon the price other departments are willing to offer for this employee.
- **Standard Cost Method:** Here the standard cost for recruiting, selecting, hiring, training and developing each grade of employees is calculated every year. The standard cost calculated for all grades together gives the value of the human resources in an organisation.
- **Present Value Approach:** Here the total earnings of an employee till his retirement is determined. Such value is discounted at a predetermined rate to fund his present value to the organisation.
- **Reward Valuation Method:** During the period of stay of an employee in an organisation, he may move up from one post to another. The value the organisation derives from the employee at each level is calculated and aggregated. Such value is discounted at a pre-determined rate to arrive at the present value of the employee.
- **Total Cost Method:** Under this method, the total cost incurred by the organisation in educating and training the employee is considered as the value of that employee. Such value should be adjusted every year on the basis of age, experience, status, seniority, performances, managerial qualities, etc.

### 1.1.26(a) Social Responsibility Accounting

This is concerned with measuring the social costs and social benefits from business operations, and communicating them to all interested group within and outside the organisation.

### 1.1.27 Inflation Accounting – Introduction and Definition

One of the weaknesses of Financial Accounting is that it does not take into account the price level changes, i.e., it assumes that the purchasing power of money remains constant. But in reality purchasing power of money keeps changing. Consequently, the financial statements do not reflect the true and fair view of the operating results and financial position of an organisation.

Accounting that takes into account the price level changes is called Inflation Accounting. Price level changes may be either inflationary or deflationary. With inflation ruling the roost, accounting for price level changes has become associated with inflationary trend. Hence the term Inflation Accounting.

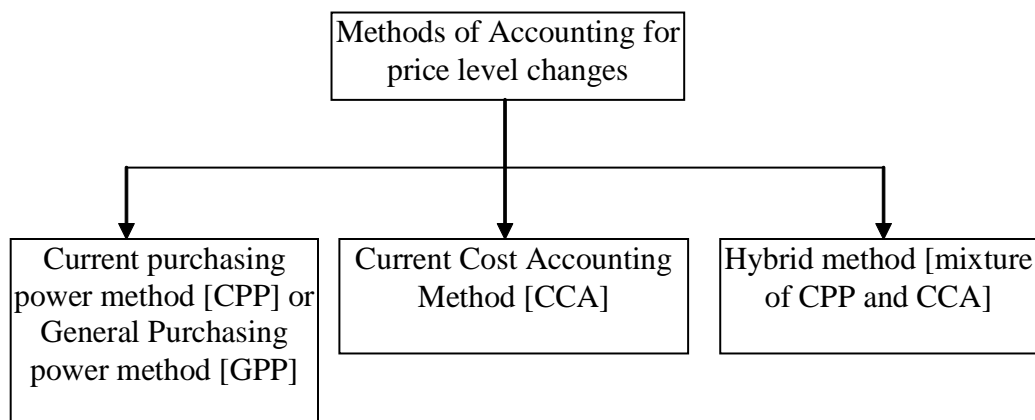
Inflation Accounting is a system of maintaining accounts at current costs and showing the effect of changes in price level on the affairs of a company during an accounting period.

#### **Definition of Inflation Accounting**

The American Institute of Certified Public Accounts defines inflation accounting as “a system of accounting which purports to record as a built-in mechanism all economic events in terms of current cost.

#### **1.1.28 Methods of accounting for price level changes**

There are three methods of accounting for price level changes as shown below:



- **Current Purchasing Power Method:** This is also known as General Purchasing Power Method. Under this method, each item in the financial statements is restated to reflect the changes in the general price level. It ignores the actual rise or fall in the price of individual items.
- **Current Cost Accounting Method:** Here, each and every item in the financial statements is restated to reflect the current price of individual items. It ignores the changes in the general purchasing power of money.
- **Hybrid Method:** This is a mixture of CPP and CCA method. Under this method, fixed assets and inventories are converted on the basis of specific indices, as done in CCA method. In these two cases, the change in the general price index is ignored. Purchasing power gains and losses on monetary items is taken cognizance as in CPP method.

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## 1.1.29 Evaluation of Inflation Accounting

### Merits of Inflation Accounting

- Under historical accounting, profits tend to get inflated due to charging of less depreciation based on original cost of the asset. Inflation accounting corrects this by charging depreciation on current value of assets.
- Since items in the Balance Sheet are stated at their current values, it shows a true and fair picture of the financial position of the business.
- Profit and Loss accounting prepared under inflation accounting reveals correct profit, as it matches current revenues with current cost.
- Facilitates better comparison of profitability of old and new product lines.
- Data available for managerial decision-making is more reliable because of the price adjusted accounting data.
- Return on investment analysis based on profit revealed through inflation accounting is more reliable than those revealed under historical accounting.

### Demerits of Inflation Accounting

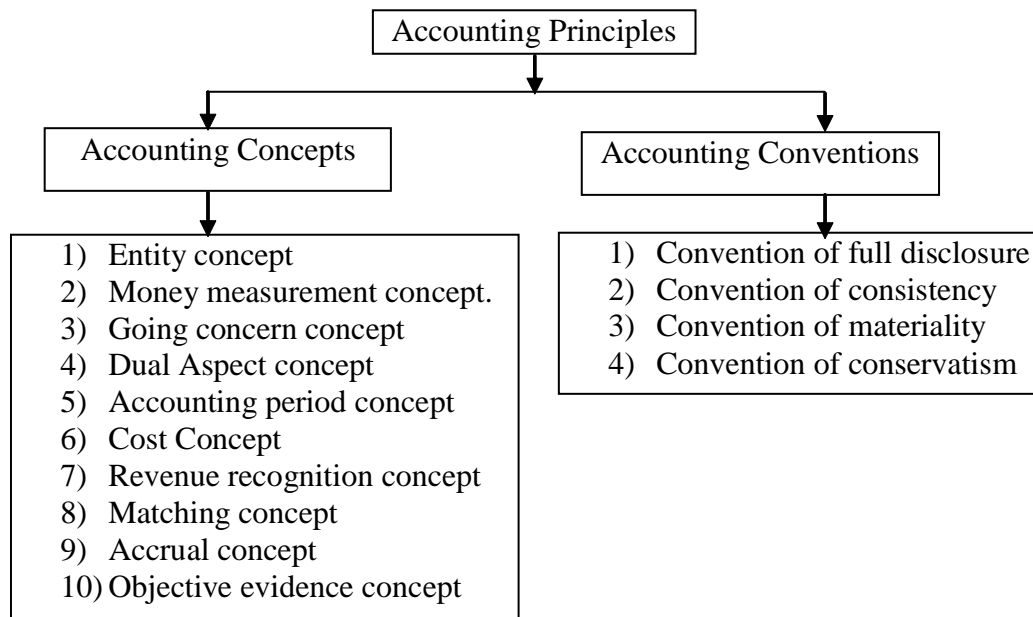
- It is a complex process.
- Charging depreciation on the basis of replacement cost of asset is not acceptable by tax authorities.
- Accounts published under various Acts in India must be on the basis of historical accounting only. So at best, inflation accounting can be used a guide only.
- Depreciation is the process of spreading the original cost of an asset over its useful life. Charging more depreciation on the basis of replacement cost of the asset goes against the concept of depreciation.
- Recording assets at its purchase price is supported by objective evidence. But replacement value of an asset is subjective estimates of individuals. Recording assets at such estimated prices makes accounts unreliable.

## 1.1.30 Financial Accounting- Generally Accepted Accounting Principles

Accounting bodies across the world have developed principles, concepts and conventions over a period of time in order to ensure uniformity in the compilation and preparation of accounts. They act as “the basic points of agreement” upon which the entire theory and practice of Financial Accounting are built.

**Generally Accepted Accounting Principles:-** These are those rules of conduct or procedure which are adopted by the Accountants universally, while recording accounting transactions. They act as general guidelines for effective accounting practical.

Accounting principles are further classified into (a) Accounting concepts and (b) Accounting conventions. These are different concepts and conventions as given below.



### 1.1.31 Accounting Concepts

These are those basic assumptions or conditions or postulates upon which the source of accounting is based. Following are the various Accounting concepts:-

- 1) **Entity Concept:** According to this concept, an organisation is treated as a separate entity distinct from its owner. All transactions are recorded from business point of view only.
- 2) **Money Measurement Concept:** This concept states that only those transactions which can be expressed in terms of money alone will be recorded in the books of accounts. Important matters which cannot be expressed in monetary units like, quality of management, morale of employees, etc. cannot be recorded in the books of accounts.
- 3) **Going Concern Concept:** This concept assumes that the business will continue to operate in the foreseeable future. It constitutes the foundation for spreading the depreciation over the useful life of the asset and treating outstanding expenses, pre-paid expenses, income due and income received in advance in the books of accounts.
- 4) **Dual Aspect Concept:** According to this concept, every business transaction will have two aspects-benefit giving aspect [called credit] and benefit receiving aspect [called debit], ie. for each transaction there will be a debit and a corresponding equal credit. This forms the basis for Double Entry System of book keeping, and “Accounting Equation” developed by American accountants.

Accounting Equation is an equation which equates the resources and the sources of such resources. It can be expressed as:

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Resources = Sources of Resources

i.e. Assets = Capital + Liabilities

- 5) **Accounting Period Concept:** This concept states that the business is a continuous affair, the life of the business is divided into suitable accounting periods [say, a period of one year], for ascertaining and reporting the results of business operations. It helps in calculating the income generated during a specific period and the expenses incurred in generating that income.
- It also forms the basis for segregating expenses into capital and revenue nature. While revenue expenditure is charged to Profit and Loss Account, capital expenditure is shown in Balance Sheet.
- 6) **Cost Concept:** According to this concept, assets purchased are recorded in the books at the cost at which they were acquired. This cost will be the base for all subsequent accounting periods. Depreciation charges will be made on the basis of the cost at which the assets were procured.
- 7) **Revenue Recognition Concept:** This concept deals with the recognition of revenue in the Income Statement. Revenue is said to have been made when the organisation gets the legal right to receive it. Revenue is the gross inflow of cash or near cash items arising in the ordinary course of business from sale of goods/ services and from use of organisation's resources by others.
- It excludes the amount collected on behalf of third parties, such as taxes.
- 8) **Matching Concept:** This concept states that revenue earned during a period should be matched with the expenses incurred in earning that revenue. Hence, while preparing Final Accounts, adjustments should be made for outstanding expenses, outstanding incomes, expenses paid in advance and income received in advance.
- 9) **Accrual Concept:** This concept advocates that revenue and costs should be recognized as and when they are earned or incurred and not when money is actually received or paid. Mercantile system of accounting is based on this concept.
- 10) **Objective Evidence Concept:** It states that each and every transaction recorded in the books of accounts should be supported by adequate physical evidence. This ensures that the recorded accounting data is definite, verifiable and also free from the personal bias of the accountant.

## 1.1.32 Accounting Conventions

These are those customs or traditions followed by accountants worldwide while preparing accounts. There are four important conventions as given below:

- 1) **Convention of Conservatism:** This convention states that while preparing accounts, accountants should take a conservative approach, in the sense that they should provide for all anticipated losses, but should not take into account expected profits. It provides the basis for valuing stock at 'cost or market price whichever is less'.

- 2) **Convention of Consistency:** This convention insists that accounting practices should remain unchanged over a period of time. This will facilitate meaningful comparison of the organisation's performance between different accounting periods. In case of any change in the accounting practice, its impact should be quantified and clearly indicated in the financial statements.
- 3) **Convention of Full Disclosure:** According to this convention, financial statements should provide all pertinent information expected of them. It has paved the way for the practice of giving references and parenthesis in the statements.
- 4) **Convention of materiality:** Accountants, while preparing final accounts, should give all material information and ignore insignificant details. What constitutes material information depends upon the circumstances and is left to the discretion of the accountants. An information is considered to be material, if its disclosure would influence the judgment of any interested party.

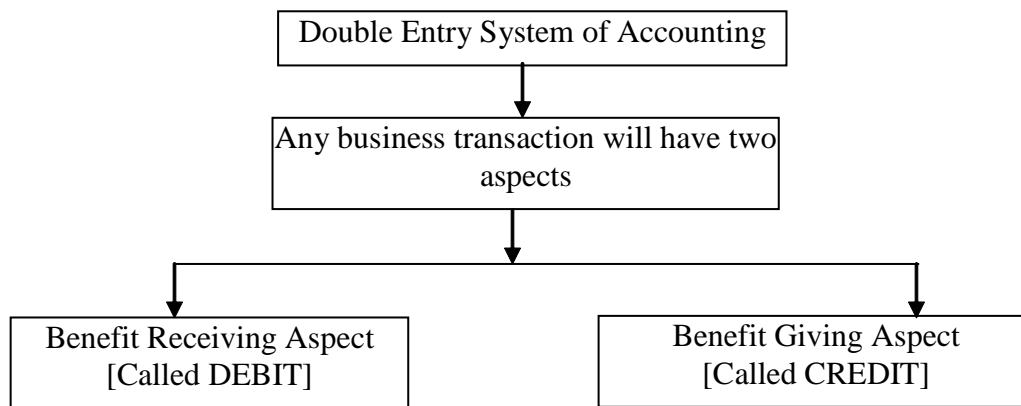
### 1.1.33 Accounting Mechanism – The Operational aspects of accounting

This starts from recording of business transactions in the books of accounts and ends with the preparation of final accounts [i.e. Trading and Profit and Loss account and Balance Sheet]

Recording of business transactions is done on the basis of Double Entry System of Accounting.

### 1.1.34 Meaning of Double Entry System

Double Entry System of keeping records was given by an Italian, named Luco Pacioli in 1494. According to this system, every transaction will have two aspects – benefit receiving aspect and benefit giving aspect as shown below:



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## 1.1.35 Meaning of Debit and Credit

### DEBIT:

The Benefit receiving aspect or Incoming aspect of a transaction is called Debit. The abbreviation “Dr.” is used for debit.

### CREDIT:

The Benefit giving aspect or Outgoing aspect of a transaction is called Credit. The abbreviation “Cr.” is used for credit.

By convention, the left hand side of an Account. [An account is one which summarizes all transactions relating to a particular item under one hand. It is abbreviated as A/c.] is treated as Debit side and right hand side of an account is treated as Credit side.

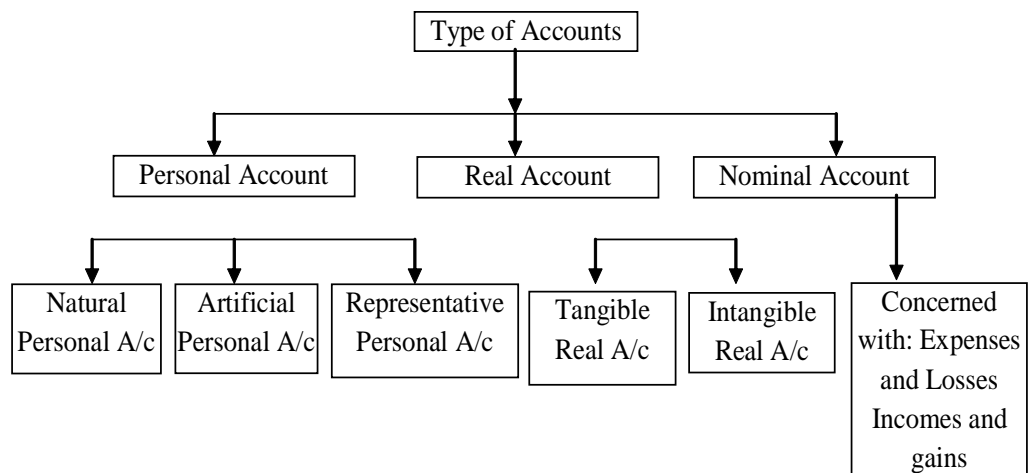
### Illustration of Debit and Credit aspects:

A Building purchased for cash. Here, building is incoming aspect and so it is debited. Cash is outgoing aspect, hence credited.

The underlying principle in Double Entry System is that for every debit, there will be a corresponding credit of equal amount and vice versa.

## 1.1.36 Types of Accounts

All enterprises will (i) have transactions dealing with persons, banks, government and other companies (ii) own things like building, stock, cash etc. (iii) generate income and incur expenses. Accordingly, we have three types of accounts as shown below with subdivisions within each.



The following table gives their meaning with examples:

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Type of Account	Meaning	Examples
Personal A/c	These are accounts meant for recording transactions with persons, banks, firms etc. Such account can be : Natural Personal A/c Artificial Personal A/c Representative Personal A/c	Natural Personal A/c: John A/c, Seetha A/c. Artificial Personal A/c: Banks, Companies Representative Personal A/c: Outstanding salary, pre-paid rent.
Real A/c	These are accounts of things or properties. It is classified as:- Tangible Real A/c: These are accounts of things which have physical existence. Intangible Real A/c: They are concerned with things which do not have physical existence.	Tangible Real A/c: Land, Building, cash. Intangible Real A/c: Goodwill, Patent, Trademark.
Nominal A/c	These accounts are meant for recording incomes and gains or expenses and losses.	Expenses: Salary paid Loss: Loss due to fine, flood, etc. Income: Discount received Gain: Profit on sale of an asset.

**1.1.37 Golden Rule – Rules for Debit and Credit**

The rules for debit and credit are commonly referred as Golden Rule. These are given below:

Type of Accounts	Debit	Credit
1) Personal A/c	The Receiver	The Giver
2) Real A/c	What comes in	What goes out
3) Nominal A/c	All expenses and losses	All Incomes and Gains

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## 1.1.38 Accounting Cycle

Accounting cycle contains a series of steps starting from recording of transactions and ending with preparation of final accounts.

Steps in the accounting cycle	Explanation
<div style="border: 1px solid black; padding: 5px; margin: 5px auto; width: 80%;">Journalising</div> <div style="text-align: center;">↓</div> <div style="border: 1px solid black; padding: 5px; margin: 5px auto; width: 80%;">Posting to Ledger A/c's</div> <div style="text-align: center;">↓</div> <div style="border: 1px solid black; padding: 5px; margin: 5px auto; width: 80%;">Balancing of Ledger A/c's</div> <div style="text-align: center;">↓</div> <div style="border: 1px solid black; padding: 5px; margin: 5px auto; width: 80%;">Preparation of Trial Balance</div> <div style="text-align: center;">↓</div> <div style="border: 1px solid black; padding: 5px; margin: 5px auto; width: 80%;">Preparation of Final A/c's</div>	<ol style="list-style-type: none"> <li>1. Transactions are recorded in the journal as and when they occur.</li> <li>2. Transactions recorded in the journal are posted to their respected accounts maintained in the Ledger.</li> <li>3. The difference between the debit total and credit total for each account is worked out.</li> <li>4. A list of the balances of each and every account is prepared to find out whether debit total equals credit total.</li> <li>5. Ultimately, the following are prepared:               <ol style="list-style-type: none"> <li>(a) Trading and Profit and Loss A/c's to calculate the profit or loss made.</li> <li>(b) Balance Sheet to find out the financial position of the company.</li> </ol> </li> </ol>

## 1.1.39 Meaning of Journal and Journalizing

**Journal** is a book which records the transactions in the same order as they occur. Since this is the originating point of the accounting cycle, a journal is also known as a Book of Original Entry.

The art of recording a transaction in the journal is called Journalising.

Following is the format of a journal:

Date	Particulars	L.F	Debit Rs.	Credit Rs.
Xxx	<div style="display: flex; justify-content: space-between;"> <span>“Account to debited”</span> <span>Dr</span> </div> <div style="margin-top: 5px;">           To “Account to be credited”         </div> <div style="margin-top: 5px;">           [Narration or Explanation]         </div>	xx	Xxx	xxx
		xx		xxx

1. Date : The date of the transaction is entered here
2. Particulars: Accounts to be debited and credited are entered here along with an explanation called “Narration”.
3. L.F: Stands for Ledger Folio. Folio mean ‘page’. It indicates the page number in the ledger where the entry is posted.
4. Debit: The amount to be debited is entered in this column against “Dr.” account.

5. Credit: The amount to be credited is entered in this column against “Account to be credited”.

#### 1.1.40 Steps in Journalising

- (i) Identify the accounts involved in the given transaction.
- (ii) Identify their type, i.e. Personal, Real, Nominal.
- (iii) Apply the Golden Rule and find out the accounts to be debited and credited.
- (iv) Make entry in the journal.

Note: It is of paramount importance to remember that transactions are recorded from business point of view.

#### Illustration 1:

*Journalise the following transactions:*

<i>Date</i>	<i>Particulars</i>
1/1/09	Ram started business with cash of Rs.1, 00,000.
2/1/09	Purchased furniture for cash Rs.15, 000.
3/1/09	Purchased goods on credit from John Rs.20,000
4/1/09	Purchased good for cash Rs.30,000
5/1/09	Sold goods to Murali on credit Rs.75,000
6/1/09	Sold goods for cash Rs.80,000
7/1/09	Paid John Rs.12,000 by cash
8/1/09	Received cash from Murali Rs.55,000
8/1/09	Murali returned goods worth Rs.1000
9/1/09	Paid salary by cash Rs.16,000
10/1/09	Withdrew cash for personal use Rs.2000
10/1/09	Returned good to John Rs.1000
11/1/09	Withdrew from bank for personal use Rs.8000
12/1/09	Withdrew from bank for official use Rs.7000
13/1/09	Goods withdrawn for personal use Rs.1000
14/1/09	Received cheque from Murali for Rs.15, 000
15/1/09	Paid John by cheque Rs.3000

**Solution:** To facilitate understanding, the solution is given in two steps as follows:

- Analysis of transaction in terms of debit and credit
- Passing of Journal entries

**NOTES**

## a) Analysis of Transaction:

Date	Accounts Involved	Types of Accounts	Application of Golden Rule	
			Effect of the transaction	Debit/Credit
1/1/09	Cash A/c Ram's Capital A/c	Real A/c Personal A/c	Cash comes in Ram is the giver of capital	Debit Credit
2/1/09	Furniture A/c Cash	Real A/c Real A/c	Furniture comes in Cash goes out	Debit Credit
3/1/09	Purchases A/c John A/c	Real A/c Personal A/c	Goods comes in John is the giver	Debit Credit
4/1/09	Purchases A/c Cash A/c	Real A/c Real A/c	Goods comes in Cash goes out	Debit Credit
5/1/09	Murali A/c Sales A/c	Personal A/c Real A/c	Murali is the receiver Goods goes out	Debit Credit
6/1/09	Cash A/c Sales A/c	Real A/c Real A/c	Cash comes in Goods goes out	Debit Credit
7/1/09	John A/c Cash A/c	Personal A/c Real A/c	John is the receiver Cash goes out	Debit Credit
8/1/09	Cash A/c Murali A/c	Real A/c Personal A/c	Cash comes in Murali is the giver	Debit Credit
8/1/09	Sales Return A/c Murali A/c	Real A/c Personal A/c	Goods comes in Murali is the giver	Debit Credit
9/1/09	Salary A/c Cash A/c	Nominal A/c Real A/c	Salary is an expense Cash goes out	Debit Credit
10/1/09	Drawings A/c Cash A/c	Personal A/c Real A/c	Ram is the receiver Cash goes out	Debit Credit
10/1/09	John A/c Purchase Returns A/c	Personal A/c Real A/c	John is the receiver Goods goes out	Debit Credit
11/1/09	Drawings A/c Bank A/c	Personal A/c Personal A/c	Ram is the receiver Banker is the giver	Debit Credit
12/1/09	Cash A/c Bank A/c	Real A/c Personal A/c	Cash comes in Banker is the giver	Debit Credit
13/1/09	Drawings A/c Purchases A/c	Personal A/c Real A/c	Ram is the receiver Goods goes out	Debit Credit
14/1/09	Bank A/c Murali A/c	Personal A/c Personal A/c	Banker is the receiver Murali is the giver	Debit Credit
15/1/09	John A/c Bank A/c	Personal A/c Personal A/c	John is the receiver Banker is the giver	Debit Credit

(i) Passing journal entries:

**NOTES**

Date	Particulars	L.F.	Debit Rs.	Credit Rs.
1/1/09	Cash A/c To Ram's Capital A/c [Being Capital introduced] Dr		1,00,000	1,00,000
2/1/09	Furniture A/c To Cash A/c [Being Furniture Purchased] Dr		15,000	15,000
3/1/09	Purchases A/c To John A/c [Being goods purchased on credit] Dr		20,000	20,000
4/1/09	Purchases A/c To Cash A/c [Being goods purchased for cash] Dr		30,000	30,000
5/1/09	Murali A/c To Sales A/c [Being goods sold on credit] Dr		75,000	75,000
6/1/09	Cash A/c To Sales A/c [Being goods sold for cash] Dr		80,000	80,000
7/1/09	John A/c To Cash A/c [Being cash paid to John] Dr		12,000	12,000
8/1/09	Cash A/c To Murali A/c [Being cash received from Murali] Dr		55,000	55,000
8/1/09	Sales Return A/c To Murali A/c [Being goods returned by Murali] Dr		1,000	1,000
9/1/09	Salary A/c To Cash A/c [Being Salary paid in cash] Dr		16,000	16,000
10/1/09	Drawings A/c To Cash A/c [Being cash drawn for personal use] Dr		2,000	2,000
10/1/09	John A/c To Purchase Return A/c [Being goods returned to John] Dr		1,000	1,000
11/1/09	Drawings A/c To Bank A/c [Being cash drawn from bank for personal use] Dr		8,000	8,000
12/1/09	Cash A/c To Bank A/c [Being cash drawn from bank for official use] Dr		7,000	7,000

# NOTES

Date	Particulars	L.F.	Debit Rs.	Credit Rs.
12/1/09	Cash A/c Dr To Bank A/c [Being cash drawn from bank for official use]		7,000	7,000
13/1/09	Drawings A/c Dr To Purchases A/c [Being goods drawn for personal use]		1,000	1,000
14/1/09	Bank A/c Dr To Murali A/c [Being cheque received from Murali]		15,000	15,000
15/1/09	John A/c Dr To Bank A/c [Being Cheque issued to John]		3,000	3,000

## 1.1.41 Ledger – Meaning and Format

Transactions relating to a particular person, asset, expense and income occur on different dates. Accordingly they get recorded in the journal at different places. Thus journal does not bring together at one place all transactions relating to a particular person, asset, expense or income. To overcome this drawback, the recorded transactions are posted to Ledger Accounts.

A Ledger Account is one which summarises transactions taken place at different dates in relation to a particular account.

The format for two ledgers accounts are given below:

Dr “Name of the Account to be debited” Cr

Date	Particulars	J.F.	Amount Rs.	Date	Particulars	J.F.	Amount Rs.
Xxx	To “A/c to be credited”		xxx				

Dr “Name of the Account to be Credited” Cr

Date	Particulars	J.F.	Amount Rs.	Date	Particulars	J.F.	Amount Rs.
				Xxx	By “A/c to be debited”		xxx

**Contents of a Ledger Account;**

- (1) Name of a ledger account is centered at the top.
- (2) Each ledger account has two sides:
  - (a) Left hand side is called Debit side [abbreviated as Dr.]
  - (b) Right hand side is called Credit side[abbreviated as Cr.]
- (3) Each side has four columns as explained below:
  - (a) Date: Contains the date of the transaction
  - (b) Particulars: Contains the name of the account to be debit/credit as given in the above Format.
  - (c) J.F: Stands for Journal Folio. It indicates the page number of the journal from where transactions are posted.
  - (d) Amount: Contains the amount to be debited/credited.

**1.1.42 Procedure for posting to Ledger Accounts****For posting a debit transaction:**

1. Open a ledger account for the amount to be debited.
2. On the debit side [i.e. left hand side], enter the date of the transaction.
3. In the “Particulars” Column, enter the account to be credited with “To” prefixed before it.
4. Enter the amount in the amount column.

**For posting a credit transaction:**

1. Open a ledger account for the amount to be credited.
2. On the credit side[i.e. right hand side], enter the date of the transaction
3. In the “Particulars” column, enter the account to be debited with “By” prefixed before it.
4. Enter the amount in the amount column

**Illustration 2:** *Journalise the following transaction and prepare necessary ledger accounts:-*

*On 2/2/09, Paid rent by cash Rs.5000.*

**Solution:**

(a) Journal:

Date	Particulars	L.F.	Debit Rs.	Credit Rs.
2/2/09	Rent A/c <span style="float: right;">Dr</span>		5,000	
	To Cash [Being cash paid towards rent]			5,000

**NOTES**

(b) Posting to ledger accounts:

Dr				Cr			
Rent A/c							
Date	Particulars	J.F.	Amount Rs.	Date	Particulars	J.F.	Amount Rs.
2/2/09	To Cash		5,000				

Dr				Cr			
Cash A/c							
Date	Particulars	J.F.	Amount Rs.	Date	Particulars	J.F.	Amount Rs.
				2/2/09	By Rent		5,000

**Balancing of Ledger accounts:**

The balance of a ledger account is the difference between the debit total and credit total. The act of finding out the difference in totals is called balancing.

**1.1.43 Procedure for balancing of ledger account**

- 1) Total the debit and credit columns separately.
- 2) If the debit total is more than the credit total, put the difference [called debit balance] on the credit side against the words "By bal c/d" [Read as By balance carried down]

OR

If the credit total exceeds the debit total, put the difference [called credit balance] on the debit side against the words "To bal c/d".

Balance c/d figure is the balance carried forward to the next accounting period as opening balance of such succeeding period.

**Illustration 3:**

*Prepare ledger accounts for the problem given in Illustration 1*

Solution:

**NOTES**

## Cash A/c

Dr

Cr

Date	Particulars	J.F	Amount Rs.	Date	Particulars	J.F	Amount Rs.
1/1/09	To Ram's Capital A/c		1,00,000	2/1/09	By furniture A/c		15,000
6/1/09	To Sales A/c		80,000	4/1/09	By Purchases A/c		30,000
8/1/09	To Murali A/c		55,000	7/1/09	By John A/c		12,000
12/1/09	To Bank A/c		7,000	9/1/09	By Salary A/c		16,000
				10/1/09	By Drawings A/c		2,000
				31/1/09	By Bal c/d		1,67,000
			2,42,000				2,42,000
1/2/09	To Bal b/d		1,67,000				

## Ram's Capital A/c

Dr

Cr

Date	Particulars	Amount Rs.	Date	Particulars	Amount Rs.
31/1/09	To bal c/d	1,00,000	1/1/09	By Cash A/c	1,00,000
		1,00,000			1,00,000
			1/2/09	By bal c/d	1,00,000

## Furniture A/c

Dr

Cr

Date	Particulars	Amount Rs.	Date	Particulars	Amount Rs.
2/1/09	To Cash A/c	15,000	31/1/09	By bal c/d	15,000
		15,000			15,000
1/2/09	To bal b/d	15,000			

## Purchases A/c

Dr

Cr

Date	Particulars	Amount Rs.	Date	Particulars	Amount Rs.
3/1/09	To John A/c	20,000	13/1/09	By Drawings A/c	1,000
4/1/09	To Cash A/c	30,000	31/1/09	By bal c/d	49,000
		50,000			50,000
1/2/09	To bal b/d	49,000			

**NOTES**

## John A/c

Dr			Cr		
Date	Particulars	Amount Rs.	Date	Particulars	Amount Rs.
7/1/09	To Cash A/c	12,000	3/1/09	By Purchases A/c	20,000
10/1/09	To Purchase Returns A/c	1,000			
15/1/09	To Bank A/c	3,000			
31/1/09	To bal c/d	4,000			
		20,000			20,000
			1/2/09	By bal b/d	4,000

## Murali A/c

Dr			Cr		
Date	Particulars	Amount Rs.	Date	Particulars	Amount Rs.
5/1/09	To Sales A/c	75,000	8/1/09	By Cash A/c	55,000
			8/1/09	By Sales Returns A/c	1,000
			14/1/09	By Bank A/c	19,000
		75,000			75,000

## Sales A/c

Dr			Cr		
Date	Particulars	Amount Rs.	Date	Particulars	Amount Rs.
31/1/09	To bal c/d	1,55,000	5/1/09	By Murali A/c	75,000
			6/1/09	By Cash A/c	80,000
		1,55,000			1,55,000
			1/2/09	By bal c/d	1,55,000

**NOTES**

## Sales Returns A/c

Dr			Cr		
Date	Particulars	Amount Rs.	Date	Particulars	Amount Rs.
8/1/09	To Murali A/c	1,000	31/1/09	By bal c/d	1,000
		1,000			1,000
1/2/09	To bal b/d	1,000			

## Salary A/c

Dr			Cr		
Date	Particulars	Amount Rs.	Date	Particulars	Amount Rs.
9/1/09	To Cash A/c	16,000	31/1/09	By bal c/d	16,000
		16,000			16,000
1/2/09	To bal b/d	16,000			

## Drawings A/c

Dr			Cr		
Date	Particulars	Amount Rs.	Date	Particulars	Amount Rs.
10/1/09	To Cash A/c	2,000	31/1/09	By bal c/d	11,000
11/1/09	To Bank A/c	8,000			
13/1/09	To Purchases A/c	1,000			
		11,000			11,000
1/2/09	To bal b/d	11,000			

## Purchase Returns A/c

Dr			Cr		
Date	Particulars	Amount Rs.	Date	Particulars	Amount Rs.
31/1/09	To bal c/d	1,000	10/1/09	By John A/c	1,000
		1,000			1,000
			1/2/09	By bal b/d	1,000

# NOTES

Dr		Bank A/c		Cr	
Date	Particulars	Amount Rs.	Date	Particulars	Amount Rs.
14/1/09	To Murali A/c	19,000	11/1/09	By Drawings A/c	8,000
			12/1/09	By Cash A/c	7,000
			15/1/09	By John A/c	3,000
			31/1/09	By bal c/d	1,000
		19,000			19,000
1/2/09	To bal b/d	1,000			

### 1.1.44 Meaning of Trial Balance

The net balance standing in each ledger account is listed in the form of a statement, containing debit and credit column. This statement is called Trial balance.

Thus, a Trial Balance is a comprehensive list of net balances shown in each of the ledger accounts.

If the double entry system has been properly followed, the debit total and credit total will be equal. We technically say that the trial balance has tallied and the books are mathematically accurate.

#### Illustration 4:

Prepare a trial balance for the problem given in *Illustration 3*.

Trial balance as on 31/1/09

Particulars	L.F.	Debit Rs.	Credit Rs.
Cash A/c	-	1,67,000	-
Ram's Capital A/c	-	-	1,00,000
Furniture A/c	-	15,000	-
Purchases A/c	-	49,000	-
John A/c	-	-	4,000
Sales A/c	-	-	1,55,000
Sales Returns A/c	-	1,000	-
Salary A/c	-	16,000	-
Drawings A/c	-	11,000	-
Purchase Returns A/c	-	-	1,000
Bank A/c	-	1,000	-
Total	-	2,60,000	2,60,000

**1.1.45 Final Accounts**

After ensuring the arithmetical accuracy of the accounts, the businessman now proceeds to find out the profit/loss made for an accounting period and his financial position.

The profit/loss made is ascertained by preparing Trading and Profit and Loss account. His financial position is found out by preparing a Balance sheet. Since these two are prepared in the final/last stage of an accounting cycle, they are referred to as Final Accounts. Thus, final consists of (a) Trading and Profit and Loss Account, and (b) Balance Sheet.

**1.1.46 Meaning of Trading Account, Profit & Loss Account, Balance Sheet****Trading Account**

This account compares the cost of the goods sold with sales made during an account period. The result shown by it is either Gross Profit or Gross Loss.

It takes into account the stock brought forward from the previous year, purchases of goods made during the accounting period, all expenses incurred in bringing the goods to the factory and for converting it finished products. This is compared with the sales generated during the said period and the stock at close.

It excludes office, administrative, selling and distribution expenses and also non operating incomes generated during the accounting period.

Since in the Trading account, only a part of the total expenses is compared with only a part of the total income generated, the resultant figure is termed Gross Profit or Gross Loss, as the case may be.

**Profit and Loss Account**

This account takes into consideration all those expenses and incomes excluded by Trading account. This resulting figure is either Net Profit or Net Loss.

It takes into account all office, administrative, selling and distribution expenses, non-operating expenses or losses and compares them with non-operating incomes or gains made during an accounting period.

Thus, this account shows the net result of the entire business operation.

**Balance Sheet**

It is a statement prepared with the accounts left over after preparing Trading and Profit and Loss account. A Balance Sheet has two sides – Assets [right hand side] and Liabilities [left hand side]. Accounts which carry debit balances are shown on the Asset side, and accounts which carry credit balances are shown on the Liabilities side.

## NOTES

The Liabilities side shows the sources from where the funds were procured and the Asset side shows how these resources were deployed and utilized. Thus, Balance Sheet shows the financial position of a business concern as at a particular point of time, normally at the closing of an accounting year.

### 1.1.47 Specimen of Trading Account, Profit & Loss Account, Balance Sheet

A proforma Trading and Profit and Loss account and Balance Sheet, with all their operational nuances are given below.

#### Specimen of a Trading and Profit and Loss Account

Trading A/c of \_\_\_\_\_ for the period ended \_\_\_\_\_

Dr			Cr		
Particulars	Rs	Rs	Particulars	Rs	Rs
To Opening Stock		Xxx	By Sales[Cash + Credit]	Xxx	
To Purchases	Xxx		Less: Sales Returns	Xxx	
Less: Purchase returns	Xxx		Less: Goods sent on sale or return basis [A]	Xxx	
Less: Free samples [A]	Xxx		By Closing Stock	Xxx	Xxx
Less: Goods drawn [A]	Xxx		Add: Goods sent on sale or return basis lying with customer [A]	Xxx	
		Xxx			
To Direct Expenses	Xxx		By Loss of stock by fire [A]		Xxx
Add: Outstanding expenses	Xxx		By *Gross loss c/d [transferred to P&L A/c]		Xxx
		xxx			
To * Gross Profit c/d [transferred to P&L A/c]		Xxx			Xxx

\* Either Gross Profit or Gross Loss will appear.

Direct Expenses: This includes wages, carriage inwards, freight, import duty, octroi, clearing expenses, dock dues, fuel and power, etc.

A: Indicates “adjustments” given in final account problems. These are discussed in a subsequent section.

**Profit and Loss Account of \_\_\_\_\_ for the period ended \_\_\_\_\_**

Dr

Cr

**NOTES**

Particulars	Rs	Rs	Particulars	Rs	Rs
To Gross Loss b/d [transferred from Trading A/c]		Xxx	By Gross Profit b/d [transferred from Trading A/c]		Xxx
To Indirect Expenses	Xxx		By Other Incomes	Xxx	
Add: Outstanding Expenses	Xxx		Add: Outstanding Incomes	Xxx	
		Xxx			Xxx
To Indirect Expenses	Xxx		By Other Incomes	Xxx	
Less: Prepaid Expenses	Xxx		Less: Income received in advance	Xxx	
		Xxx			Xxx
To Interest on Capital		Xxx	By Interest on drawings		Xxx
To Depreciation on assets [A]		Xxx	By Provision for Bad Debts and Discount [Old – New]		Xxx
To Bad Debts		Xxx			
To Further Bad Debts incurred [A]		Xxx			
To Provision for Bad Debts and discount [New – Old]		Xxx			
To **Net Profit [transferred to capital A/c]		Xxx	By **Net Loss [transferred to capital A/c]		Xxx
		xxx			xxx

\*\* Either Net Profit or Net Loss will appear.

Indirect Expenses: These include office, administrative, selling and distribution expenses and non- operating expenses.

Other Incomes: These include non-operating incomes like commission received discount received, dividend received interest received rent received, etc.

**NOTES**

A: Indicates “adjustments” given in final account problems. These are discussed in a subsequent section.

**Specimen of a Balance Sheet**

Balance Sheet of \_\_\_\_\_ as on \_\_\_\_\_

<b>Liabilities</b>	<b>Rs.</b>	<b>Rs.</b>	<b>Assets</b>	<b>Rs</b>	<b>Rs.</b>
Capital	Xxx		Fixed Assets:	Xxx	
			Building, Plant and Machinery, etc.		
Add: Net Profit	Xxx		Less: Depreciation [A]	Xxx	
Add: Interest on drawings	Xxx				Xxx
Less: Drawings [Cash + Goods]	Xxx		Investments		Xxx
Less: Interest on drawings	Xxx		Current Assets:		
			Closing Stock		Xxx
Less: Net Loss [if any]	Xxx		Stock lying with customers		Xxx
		Xxx	Cash in hand and at bank		Xxx
Long Term Loans:			Bills Receivable		Xxx
Debentures		Xxx			
Bank Loan		Xxx			
Loan on mortgage of fixed assets		Xxx			
Current Liabilities:			Prepaid expenses[A]		Xxx
Sundry Creditors		Xxx			
Bills Payable		Xxx			
Bank Overdraft Outstanding		Xxx			
Expenses [A]		Xxx			
Income received in advance [A]					
		Xxx			

**1.1.48 Trading and Profit and Loss Account related concepts**

- 1) **Cost of goods sold:** This can be ascertained from Trading account by using :
- 2)  $\text{Cost of goods sold} = \text{Opening stock} + \text{Purchases} + \text{Direct Expenses} - \text{Closing stock}$ .
- 3) **Gross Profit:** It is the excess of net sales over the cost of goods sold.
- 4) **Gross Loss:** It is the excess of cost of goods sold over net sales.
- 5) **Opening Stock:** It is the stock in hand at the commencement of an accounting year. Closing stock of the previous year becomes the opening stock of the current year.
- 6) **Closing Stock:** It is the stock in hand lying unsold at the end of an accounting year. This becomes the opening stock of the next accounting period.
- 7) **Purchases:** When goods meant for re-sale are procured, it is called purchases.
- 8) **Purchase Returns:** When goods purchased are returned to its supplier, it is called Purchase Returns.
- 9) **Sales:** When goods meant for re-sale are sold, it is called sales.
- 10) **Sales Returns:** When sold goods are returned back from customer, it is called Sales Returns.
- 11) **Direct and Indirect Expenses:** Expenses incurred in bringing the purchased raw materials to the factory and converting them into finished products are called Direct Expenses.  
Expenses incurred subsequent to this stage are called Indirect Expenses. These include Office, administrative, selling and distribution expenses.
- 12) **Outstanding Expenses:** These are expenses which have become due but is yet to be paid.
- 13) **Prepaid expenses / Expenses paid in advance:** These refer to expenses paid before it became due for payment.
- 14) **Outstanding Income:** These are income which have become due but is yet to be received.
- 15) **Income received in advance:** These refer to income received before it became due for receipt.
- 16) **Bad debts:** It refers to that of the amount due from others which has become definitely irrecoverable. It is an actual loss to the business.
- 17) **Provision for doubtful debts [PBD]:** This is that part of the amount due from others whose recovery is doubtful. It is not an actual loss but an anticipated loss. Amount set aside to meet such expected loss is known as Provision for Bad Debts.
- 18) **Provision for discount on debtors:** Some of the debtors may make their payments properly as per their credit terms. Discount amount set aside in anticipation of such prompt payments, is called Provision of Discount on debtors.

# NOTES

**19) Depreciation:** It refers to the monetary value of the wear and tear resulting from the use of an asset.

**20) Net Profit:** It is the excess of gross profit and non-operating incomes over the indirect and non-operating expenses of the business.

**21) Net Loss:** If the indirect and non-operating expenses exceed the non-operating income and gross profit, it is termed as net loss.

## 1.1.49 Balance Sheet related concepts

- 1) **Capital:** It is the amount contributed by the owner of the business.
- 2) **Liabilities:** It is the amount which the business owes to outsiders.
- 3) **Current Liabilities:** Liabilities which become due for payment within a period of one year are called current liabilities.
- 4) **Long – term liabilities:** Liabilities whose due date for payment falls beyond one year are termed long-term liabilities.
- 5) **Sundry Creditors:** It is a collective name given to a group of outsiders to whom the business is obliged to pay.
- 6) **Assets:** They refer to rights or properties acquired by a business and the amount due from others.
- 7) **Fixed Assets:** Assets procured for permanent use in the business is termed fixed assets. By using these assets, a firm earns its revenues. It includes land, building, plant and machinery, etc.
- 8) **Intangible Fixed Assets:** Assets which does not have physical appearance are called intangible fixed assets. Examples are goodwill, patent, trademark, copyright, etc.
- 9) **Current assets or Floating or Circulating assets:** Assets which are meant for resale and those which can change from one form to another within a year are grouped as current assets.
- 10) **Debtors:** It is a collective name given to group of outsiders from whom the amounts are due to the business.

## 1.1.50 Preparation of Final Accounts

In problems relating to final accounts, following two things will be given:

- i. Trial Balance.
- ii. Adjustments.

How items given in the above are dealt with in final accounts.

- i. Trial Balance: Items given in the trial balance will appear at one place in the final accounts, i.e. either in Trading A/c [OR] Profit and Loss A/c [OR] Balance Sheet.

- ii. Adjustments: Those given in “adjustments” will appear at two places in the final accounts, i.e. generally either in:
- Trading A/c and Balance Sheet
  - Profit & Loss A/c and Balance Sheet
  - Trading A/c and Profit and Loss A/c

The following table gives the various adjustments which normally appear in final accounts problems along with their respective adjustments entries. It also indicates how the adjustments be dealt with in final accounts.

S.No	Item appearing in Adjustments	Adjustment Journal Entry	How dealt with in		
			Trading A/c	Profit and Loss A/c [P&L A/c]	Balance Sheet
1	Closing Stock	Closing stock A/c Dr To Trading A/c	Shown on credit side	-	Shown on Asset side
2	Expenses outstanding/due/owing	Particular Expense A/c Dr To outstanding Expenses A/c	It is added to the particular expense account shown on the debit side of Trading A/c or Profit and Loss A/c, as the case may be		The outstanding expense is shown on the liability side.
3	Income outstanding/due	Outstanding Income A/c Dr To Particular Income A/c	Added to particular income account on the credit side of Trading A/c or Profit and Loss A/c as the case may be		Outstanding income is shown on the asset side
4	Prepaid expenses/expense paid in advance/unexpired expense	Prepaid expense A/c Dr To Particular expense A/c	Deducted from particular expense on the debit side of Trading A/c and P&L A/c, as the case may be		Shown on the asset side
5	Income received in advance	Particular Income A/c Dr To Income received in advance	-	Deducted from the relevant income on the credit side	Shown on the liability side
6	Interest on capital	Interest on capital A/c Dr To Capital A/c	-	Shown on the debit side	Added to capital on the liability side
7	Interest on drawings	Capital A/c Dr To Drawings A/c	-	Shown on the credit side	Deducted from capital on the liability side
8	Goods taken by the owner	Drawings A/c Dr To Purchases A/c	Deducted from Purchases on the debit side	-	Deducted from capital on the liability side

# NOTES

S.No	Item appearing in Adjustments	Adjustment Journal Entry	How dealt with in		
			Trading A/c	Profit and Loss A/c [P&L A/c]	Balance Sheet
9	Goods given away as free sample	Advertisement A/c Dr To Purchases A/c	Deducted from Purchases on the debit side	Shown as Advertisement on the debit side	-
10	Loss by fire	Insurance Co. A/c Dr (amount agreed to be paid) P&L A/c Dr (amount not compensated) To Trading A/c (total loss by fire)	Total loss by fire shown on the credit side as "Loss by fire"	Amount not compensated is shown on the debit side	Insurance claim accepted is shown on the asset side
11	Depreciation on asset	Depreciation A/c Dr To Asset A/c	-	Depreciation shown on the debit side	Depreciation deducted from the gross value of asset
12	Further Bad debts incurred	Bad debts A/c Dr To Debtors A/c	-	Bad debts shown on the debit side	Deducted from debtors on the asset side
13	Provision for bad debts [PBD]	P&L A/c Dr To PBD A/c	-	PBD shown on the debit side	Deducted from Debtors on the asset side
14	Provision for discount on debtors	P&L A/c Dr To Provision for discount	-	Provision for discount on debtors shown on debit side	Deducted from Debtors on the asset side
15	Wages for constructing a building wrongly included in wages A/c	Buildings A/c Dr To Wages A/c	Deducted from wages on the debit side	-	Added to Building A/c on the asset side
16	Manager's Commission	P&L A/c Dr To Commission Payable A/c	-	Commission shown on the debit side	Commission payable is shown on liability side
17	Bad debts recovered	(a) Cash A/c Dr To Bad Debts recovery A/c (b) Bad debts recovery A/c Dr To P&L A/c	-	Bad debts recovered is shown on credit side	Added to cash balance on the Asset side

**Note:**

- 1) If closing stock appears in the trial balance, then it should be shown ONLY on the ASSET side of the balance sheet.

2) Manager's commission on the net profit:-

(a) Before charging such commission:

$$\text{Commission payable} = [\text{Commission\%} / 100] * \text{Profit}$$

(b) After charging such commission:

$$\text{Commission payable} = [\text{Commission\%} / [100 + \text{Commission\%}]] * \text{Profit}$$

### Short Problems – Provision for bad debts:

#### Illustration 5:

On January 1, 2008, provision for bad debts stood at Rs.1, 600. Bad debts incurred during the year was Rs.1, 000. On December 31, 2008, Sundry Debtors stood at Rs.60, 000. Make a provision for bad debts at 5% on debtors. Show Journal Ledger, P&L A/c, and Balance Sheet.

#### Solution:

Journal

Date	Particulars	L.F	Debit Rs.	Credit Rs.
31/12/08	Provision for bad debts A/c Dr To Bad debts (Bad debts incurred transferred to PBD)		1,000	1,000
31/12/08	P&L A/c Dr To PBD (Being new reserve raised from Rs.600 to Rs.3,000)		2,400	2,400

#### Ledger Bad Debts

Dr			Cr		
Date	Particulars	Amount Rs.	Date	Particulars	Amount Rs.
30.6.08 (Assumed Date)	To Sundry debtors	1000	31.12.08	By PBD A/c	1000
		1000			1000

**NOTES****Provision for bad debts**

Dr			Cr		
Date	Particulars	Amount Rs.	Date	Particulars	Amount Rs.
31.12.08	To Bad debts	1000	1.1.08	By bal b/d	1600
31.12.08	To bal c/d [5% on Rs.60,000]	3000	31.12.08	By P&L A/c	2400
		4000			4000

**Profit and Loss A/c**

Dr		Cr	
Particulars	Amount Rs.	Particulars	Amount Rs.
To PBD [3000 – 600]	2400		

**Balance Sheet**

Liabilities	Amount Rs.	Assets	Amount Rs.	Amount Rs.
		Sundry Debtors	60,000	
		(-) PBD at 5%	3,000	
				57,000

**Illustration 6:**

On 1<sup>st</sup> January 2007, the provision for bad debts stood at Rs.5, 000. Bad debts for the year was Rs.2, 000. On 31<sup>st</sup> December 2007, Debtors balances stood at Rs.1, 00, 000. You are required to maintain PBD at 2%. Pass Journal entries, and show ledger accounts, P&L A/c and the Balance Sheet.

**Solution:**

Journal

Date	Particulars	L.F.	Debit Rs.	Credit Rs.
31.12.07	Provision for bad debts A/c Dr		2000	
	To Bad debts			2000
	[Bad debts transferred to PBD A/c]			
31.12.07	Provision for bad debts A/c Dr		1000	
	To P&L A/c			1000
	[Surplus in PBD A/c transferred to P&L A/c]			

**NOTES**Ledger  
Bad Debts:

Dr

Cr

Date	Particulars	Amount Rs.	Date	Particulars	Amount Rs.
30.6.07	To Debtors	2000	31.12.07	By PBD A/c	2000
		2000			2000

## Provision for bad debts:

Dr

Cr

Date	Particulars	Amount Rs.	Date	Particulars	Amount Rs.
31.12.07	To Bad debts	2000	1.1.07	By bal b/d	5000
31.12.07	To P&L A/c	1000			
31.12.07	To Bal c/d	2000			
		5000			5000
			1.1.08	By bal b/d	2000

## Profit and Loss A/c

Dr

Cr

Particulars	Amount Rs.	Particulars	Amount Rs.
		By PBD [3000-2000]	1000

## Balance Sheet

Liabilities	Amount Rs.	Assets	Amount Rs.	Amount Rs.
		Debtors	1,00,000	
		(-) PBD at 5%	2,000	
				98,000

**NOTES****Illustration 7:**

Following details are extracted from a trial balance as on 31/12/08.

<i>Particulars</i>	<i>Amount Rs.</i>	<i>Amount Rs.</i>
<i>Opening PBD</i>	-	4,000
<i>Opening Provision for discount</i>	-	-
<i>Discount allowed</i>	5,000	-
<i>Bad debts</i>	3,000	-
<i>Debtors</i>	2,60,000	-

You are given the following further information:-

- I. Write off further bad debts Rs.2000
- II. Maintain PBD at 5%
- III. Maintain Provision for discount at Rs.6000

Pass journal entries and show ledger accounts, P&L A/c and the balance sheet.

**Solution:****Journal**

<b>Date</b>	<b>Particulars</b>	<b>L.F.</b>	<b>Debit Rs.</b>	<b>Credit Rs.</b>
31.12.08	Bad debts A/c                      Dr To Debtors [Bad debts incurred]		2,000	2,000
31.12.08	PBD A/c                              Dr To Bad debts A/c [Bad debts transferred to PBD A/c]		5,000	5,000
31.12.08	P&L A/c                              Dr To PBD A/c [New provision raised from Rs.5000 to Rs.9000]		4,900	4,900
31.12.08	Provision for Discount A/c      Dr To Discount allowed A/c [Discount allowed transferred]		5,000	5,000
31.12.08	P&L A/c                              Dr To Provision for discount A/c [New provision for discount raised]		7,000	7,000

**NOTES****Ledger  
Bad Debts:**

Dr			Cr		
Date	Particulars	Amount Rs.	Date	Particulars	Amount Rs.
30.6.08 (Assumed)	To Debtors	3,000	31.12.08	By PBD A/c	5,000
31.12.08	To Debtors	2,000			
		5,000			5,000

**Provision for bad debts:**

Dr			Cr		
Date	Particulars	Amount Rs.	Date	Particulars	Amount Rs.
31.12.08	To Bad debts	5,000	1.1.08	By bal b/d	5,000
31.12.08	To Bal c/d	9,900	31.12.08	By P&L A/c	4,900
		14,900			14,900

**Discount allowed A/c:**

Dr			Cr		
Date	Particulars	Amount Rs.	Date	Particulars	Amount Rs.
30.6.08 (Assumed)	To Debtors	5,000	31.12.08	By Provision for discount A/c	5,000
		5,000			5,000

**Provision for Discount A/c:**

Dr			Cr		
Date	Particulars	Amount Rs.	Date	Particulars	Amount Rs.
31.12.08	To Discount allowed A/c	5,000	1.1.08	By bal b/d	4,000
31.12.08	To Bal c/d	6,000	31.12.08	By P&L A/c	7,000
		11,000			11,000

**NOTES****Profit and Loss A/c:****Dr****Cr**

Particulars	Amount Rs.	Particulars	Amount Rs.
To PBD A/c	4,900		
To Provision for discount A/c	7,000		

**Balance Sheet:**

Liabilities	Amount Rs.	Assets	Amount Rs.	Amount Rs.
		Debtors	2,00,000	
		(-) Bad debts	2,000	
			1,98,000	
		(-) PBD at 5%	9,900	
			1,88,100	
		(-) Provision for discount	6,000	
				1,82,100

**Illustration 8:- Preparation of Trading Account**

Following balances are extracted from the books of Mr. Anand on 31/12/07.

Particulars	Amount Rs.	Particulars	Amount Rs.
Opening Stock	14,000	Sales	1,50,000
Purchases	36,000	Sales returns	5,000
Purchase returns	3,000	Fuel and Power	10,000
Wages	12,000	Direct Expenses	4,000
Freight inwards	2,000		

Closing stock on 31<sup>st</sup> December 2007 was Rs.30, 000. Wages outstanding was Rs.2, 000. A customer returned goods worth Rs.1, 000 on 31<sup>st</sup> December 2007. It was not included in stock and no entry was passed. Prepare Trading Account.

**Solution:**

Trading Account of Mr. Anand for the year ended 31/12/07

**NOTES**

Dr			Cr		
Particulars	Amount Rs.	Amount Rs.	Particulars	Amount Rs.	Amount Rs.
To Opening stock		14,000	By Sales	1,50,000	
To Purchases	36,000		(-) Returns[5000+1000]	6,000	
(-) Returns	3,000	33,000			1,44,000
To Wages (+) Outstanding Wages	12,000 2,000		By Closing stock		30,000
To Freight inwards		14,000			
To Fuel and Power		2,000			
To Direct expenses		10,000			
To Gross Profit c/d		4,000			
		97,000			
		1,74,000			1,74,000

**Illustration 9:-** Preparation of Trading and Profit and Loss Account

From the following ascertain gross profit and net profit:

**NOTES**

<i>Particulars</i>	<i>Amount Rs.</i>	<i>Particulars</i>	<i>Amount Rs.</i>
<i>Opening Stock</i>	<i>3,000</i>	<i>Closing Stock</i>	<i>6,000</i>
<i>Purchases</i>	<i>20,000</i>	<i>Wages</i>	<i>3,000</i>
<i>Sales</i>	<i>50,000</i>	<i>Wages outstanding</i>	<i>300</i>
<i>Return outwards</i>	<i>1,000</i>	<i>Loss due to fire (uninsured)</i>	<i>2,000</i>
<i>Return inwards</i>	<i>500</i>	<i>Indirect expenses</i>	<i>4,000</i>
<i>Carriage inwards</i>	<i>700</i>		
<i>Prepaid indirect expenses</i>	<i>600</i>		

**Solution:****Trading and Profit and Loss Account**

Dr

Cr

<b>Particulars</b>	<b>Amount Rs.</b>	<b>Amount Rs.</b>	<b>Particulars</b>	<b>Amount Rs.</b>	<b>Amount Rs.</b>
To Opening stock		3,000	By Sales	50,000	
To Purchases	20,000		(-) Returns	500	
(-) Returns	1,000	19,000			49,500
To Carriage inwards		700	By Loss due to fire		2,000
To Wages	3,000		By Closing stock		6,000
(+) Outstanding	300				
		3,300			
To Gross profit c/d		31,500			
		57,500			57,500
To Loss due to fire		2,000	By Gross Profit b/d		31,500
To Indirect expenses	4,000				
(-) Pre-paid expenses	600	3,400			
To Net Profit c/d		26,100			
		31,500			31,500

**Comprehensive Problems****NOTES****Illustration 10:**

From the following trial balance of Mr. Dass as on 31/12/05, Prepare final accounts.

<i>Debit balances</i>	<i>Amount Rs</i>	<i>Credit balances</i>	<i>Amount Rs</i>
<i>Land and Building</i>	<i>42,000</i>	<i>Capital</i>	<i>62,000</i>
<i>Machinery</i>	<i>20,000</i>	<i>Sales</i>	<i>98,780</i>
<i>Patents</i>	<i>7,500</i>	<i>Returns Outwards</i>	<i>500</i>
<i>Opening Stock</i>	<i>5,760</i>	<i>Creditors</i>	<i>6,300</i>
<i>Debtors</i>	<i>14,500</i>	<i>Bills payable</i>	<i>9,000</i>
<i>Purchases</i>	<i>40,675</i>		
<i>Cash in hand</i>	<i>3,170</i>		
<i>Return inwards</i>	<i>680</i>		
<i>Wages</i>	<i>8,480</i>		
<i>Fuel</i>	<i>4,730</i>		
<i>Carriage on sales</i>	<i>3,200</i>		
<i>Carriage on purchases</i>	<i>2,040</i>		
<i>Salaries</i>	<i>15,000</i>		
<i>General Expenses</i>	<i>3,000</i>		
<i>Insurance</i>	<i>600</i>		
<i>Drawings</i>	<i>5,245</i>		
	<i>1,76,580</i>		<i>1,76,580</i>

- Adjustments*
- (1) *Stock on 31/12/05 was Rs.6,800*
  - (2) *Salary outstanding Rs.1,500*
  - (3) *Insurance Prepaid Rs.150*
  - (4) *Depreciate Machinery at 10% and Patents at 20%*
  - (5) *Create a provision of 2% on debtors for bad debts.*

**NOTES****Solution:**

Trading and Profit and Loss Account of Mr. Dass for the year ended 31/12/05

Dr

Cr

Particulars	Amount Rs.	Amount Rs.	Particulars	Amount Rs.	Amount Rs.
To Opening stock		5,760	By Sales	98,780	
To Purchases	40,675		(-) Returns	680	
(-) Returns	500	40,175			98,100
To Wages		8,480	By Closing stock		6,800
To Fuel		4,730			
To Carriage on purchases		2,040			
To Gross profit c/d		43,715			
		1,04,900			1,04,900
To Depreciation on Machinery		2,000	By Gross Profit b/d		43,715
To Depreciation on Patent		1,500			
To PBD		290			
To Carriage on sales		3,200			
To Salaries	15,000				
(+) Outstanding	1,500	16,500			31,500
To General Expenses		3,000			
To Insurance	600				
(-) Pre-paid	150	450			
To Net Profit [transferred to capital]		16,775			
		43,715			43,715

## Balance Sheet of Mr. Dass as on 31/12/05

## NOTES

Liabilities	Amount Rs.	Amount Rs.	Assets	Amount Rs.	Amount Rs.
Outstanding salary		1,500	Land & Building		42,000
Capital	62,000		Machinery	20,000	
(+) Net profit	16,775		(-) Depreciation at 10%	2,000	
(-) Drawings	5,245				18,000
		73,530	Patents	7,500	
			(-) Depreciation at 20%	1,500	
Creditors		6,300	Debtors	14,500	6,000
Bills Payable		9,000	(-) PBD at 2%	290	
					14,210
			Cash in hand		3,170
			Prepaid insurance		150
			Closing stock		6,800
		90,330			90,330

**Illustration 11:**

From the following balances taken from the books of Arumugam as on 31/12/2008, prepare final accounts.

Debit balances	Amount Rs	Credit balances	Amount Rs
Capital	20,000	Sales	2,00,000
Drawings	7,500	Returns outwards	5,000
Furniture & Fittings	1,000	Returns inwards	20,000
Typewriter	750	Salaries	8,500
Cycle	200	Wages	15,000
Motor van	16,500	Rent	3,300
Sundry Debtors	20,000	Discount Earned	700
Sundry Creditors	10,000	Discount allowed	500
Loan Borrowed at 10%	6,000	Commission allowed	1,000

**NOTES**

<i>Debit balances</i>	<i>Amount Rs</i>	<i>Credit balances</i>	<i>Amount Rs</i>
<i>Purchases</i>	<i>1,20,000</i>	<i>Postage &amp; Telegram</i>	<i>180</i>
<i>Opening Stock</i>	<i>20,000</i>	<i>Carriage outwards</i>	<i>1000</i>
<i>Entertainments</i>	<i>600</i>	<i>Carriage inwards</i>	<i>3000</i>
<i>Miscellaneous</i>	<i>300</i>	<i>Res. For Bad &amp; Doubtful debts</i>	<i>330</i>
<i>Interest (paid upto 30.10.08)</i>	<i>450</i>	<i>Cash on hand</i>	<i>300</i>
<i>Bad debts</i>	<i>250</i>	<i>Cash with bankers</i>	<i>1,700</i>

The following adjustments are necessary:

1. Stock as on 31/12/08 Rs.8,000
2. Provide for the following: Salaries due Rs.500, Rent due Rs.300, Wages due Rs.1,000, and interest on loan borrowed due for two months.
3. Maintain a reserve for bad and doubtful debts at 5% on debtors.
4. Provide Depreciation on:
5. Furniture & Fittings 10%, Typewriter 10%, Cycle 15%, Motor van 20%
6. Interest at 6% to be charged on capital but not on Drawings.

**Solution:**

Trading and Profit and Loss A/c of Sri Arumugam for the year ended 31/12/08

Dr

Cr

<b>Particulars</b>	<b>Amount Rs.</b>	<b>Amount Rs.</b>	<b>Particulars</b>	<b>Amount Rs.</b>	<b>Amount Rs.</b>
To Opening stock		20,000	By Sales	2,00,000	
To Purchases	1,20,000		(Less) Returns	20,000	
(Less) Returns	5,000				49,500
		1,15,000	By Closing Stock		8,000
To Wages	15,000				
Add: Outstanding	1,000				
		16,000			
To Carriage inwards		3,000			
To Gross profit c/d		34,000			
		1,88,000			1,88,000
To Salaries	8,500		By Gross Profits b/d		34,000
Add: Outstanding	500				
		9,000	By discount Earned		700

## NOTES

Particulars	Amount Rs.	Amount Rs.	Particulars	Amount Rs.	Amount Rs.
To Rent	3,300				
Add: Outstanding	300				
		3,600			
To Interest	450				
Add: Outstanding	100				
		550			
To Discount allowed		500			
To Commission allowed		1,000			
To Postage & Telegrams		180			
To Carriage outwards		1,000			
To Entertainment		600			
To Miscellaneous expenses		300			
To Interest on capital		1,200			
To Bad debts		250			
To PBD New	1000				
Old	330				
		670			
To Depreciation on Furniture	100				
Typewriter	75				
Cycle	30				
Motor van	3,300				
		3,505			
To Net Profit transferred to capital A/c (Bal Fig.)		12,345			
		34,700			
					34,700

**NOTES****Balance Sheet of Sri Arumugam as on 31/12/08**

<b>Liabilities</b>	<b>Amount Rs.</b>	<b>Amount Rs.</b>	<b>Assets</b>	<b>Amount Rs.</b>	<b>Amount Rs.</b>
Sundry Creditors		10,000	Cash on hand		300
Loans at 10%		6,000	Cash with Bankers		1,700
Capital A/c	20,000		Sundry Debtors	20,000	
Add: Net Profit	12,345		Less: Res. For Bad debts	1,000	
Ass: Int on capital	1,200				19,000
	33,545		Closing Stock		8,000
Less: Drawings	7,500				
		26,045	Furniture & Fittings	1,000	
Outstanding Expenses:			Less: Depreciation	100	
Salaries	500				900
Rent	300		Typewriter	750	
Wages	1,000		Less: Depreciation	75	
Interest on Loan	100				675
		1,900	Cycle	200	
			Less: Depreciation	30	
					170
			Motor Van	16,500	
			Less: Depreciation	3,300	
					13,200
		43,945			43,945

**Illustration 12:**

Prepare Trading & Profit and Loss Account and Balance Sheet as on 31<sup>st</sup> March 2004.

<i>Debit balances</i>	<i>Amount Rs</i>	<i>Credit balances</i>	<i>Amount Rs</i>
<i>S.Chandra's Capital A/c</i>	<i>1,19,000</i>	<i>Manufacturing Wages</i>	<i>40,970</i>
<i>S.Chandra's Drawing A/c</i>	<i>10,550</i>	<i>Sales</i>	<i>3,56,430</i>
<i>Sundry Creditors</i>	<i>59,630</i>	<i>Returns inwards</i>	<i>2,780</i>
<i>6% Loan A/c (Credit)</i>	<i>20,000</i>	<i>Salaries</i>	<i>11,000</i>
<i>Cash in hand</i>	<i>3,030</i>	<i>Rent &amp; Taxes</i>	<i>5,620</i>
<i>Cash at Bank</i>	<i>18,970</i>	<i>Interest &amp; Discount (Dr)</i>	<i>5,870</i>
<i>Sundry Debtors (including Kalpana for dishonoured bill for Rs.1,000)</i>	<i>62,000</i>	<i>Repairs &amp; Renewals</i>	<i>3,370</i>
<i>Bills receivable</i>	<i>9,500</i>	<i>Insurance (including premium of Rs.300 paid upto 30<sup>th</sup> sep.2004)</i>	<i>400</i>
<i>Provision for doubtful debts</i>	<i>2,500</i>	<i>Bad debts</i>	<i>3,620</i>
<i>Fixtures &amp; Fittings</i>	<i>8,970</i>	<i>Commission received</i>	<i>5,640</i>
<i>Stock 1<sup>st</sup> April, 2003</i>	<i>89,680</i>	<i>Plant &amp; Machinery</i>	<i>28,800</i>
<i>Purchases</i>	<i>2,56,590</i>		

**Adjustments:**

- i. Stock on hand on 31<sup>st</sup> March 2004 was Rs.1,28,960.
- ii. Write off half of Kalpana's dishonoured bill.
- iii. Create a provision of 5% on sundry debtors.
- iv. Charge 5% interest on capital.
- v. Manufacturing wages include Rs.1,200 for erection of new machinery purchased last year.
- vi. Depreciate Plant & Machinery by 5% and Fixtures & Fittings by 10% p.a.
- vii. Commission earned but not received amount to Rs.600
- viii. Interest on loan for the last two months is not paid.

**NOTES****Solution:**

Trading and Profit and Loss A/c for the year ended 31/03/04

Dr

Cr

Particulars	Amount Rs.	Amount Rs.	Particulars	Amount Rs.	Amount Rs.
To Opening stock		89,680	By Sales	3,56,430	
To Purchases		2,56,590	(Less) Returns	2,780	
To Manu.Wages	40,970		By Closing Stock		3,53,650
Less: Erection Charges	1,200				1,28,960
		39,770			
To Gross Profit c/d		96,570			
		4,82,610			4,82,610
To Bad debts		3,620	By Gross Profit b/d		96,570
To Repairs & Renewals		3,370	By Commission received	5,640	
To Rent & Taxes		5,620	Add: Outstanding	600	
To Salaries		11,000			6,240
To Interest on capital		5,970			
To Interest on loan		200			
To Bad debts(Kalpana)		1,000			
To PBD :					
New	3,050				
Old	2,500				
		550			
To Depreciation on Plant & Machinery		1,500			
To Depreciation on Fixture & Fittings		897			
To Interest & Discount		5,870			
To Travelling Expenses		1,880			
To Insurance	400				
Less: Prepaid	300				
		100			
To Net Profit		61,233			
		1,02,810			1,02,810

## Balance Sheet as on 31/03/04

## NOTES

Liabilities	Amount Rs.	Amount Rs.	Assets	Amount Rs.	Amount Rs.
Capital	1,19,400		Cash in hand		3,030
Add: Net profit	61,233		Cash at Bank		18,970
Add: Interest on cap. at 5%	5,970		Debtors	62,000	
Less: Drawings	10,550		Less: Bad debts	1,000	
		1,76,053		61,000	
Creditors		59,630	Less: PBD at 5%	3,050	
					57,950
6% Loan		20,000	Bills receivable		9,500
Interest outstanding on loan [(6/100)*20,000*(1/12)*2]		200	Fixtures & Fittings	8,970	
			Less: Dep. at 10%	897	
					8,073
			Plant & Machinery	28,800	
			Add: Erection Charges	1,200	
				30,000	
			Less: Dep. at 5%	1,500	
					28,500
			Prepaid Insurance		300
			Commission Outstanding		600
			Closing Stock		1,28,960
		2,55,883			2,55,883

**Illustration 13:**

The following is the Trial Balance of John as on 31<sup>st</sup> March, 2008. You are required to prepare the Trading and Profit & Loss Account for the year ended 31<sup>st</sup> March, 2008 and Balance Sheet as on that date after making the necessary adjustments.

**NOTES**

<i>Particulars</i>	<i>Debit Rs.</i>	<i>Credit Rs.</i>
<i>Sundry Debtors</i>	5,00,000	
<i>Sundry Creditors</i>		2,00,000
<i>Outstanding Liability for expenses</i>	55,000	
<i>Wages</i>	1,00,000	
<i>Carriage Outwards</i>	1,10,000	
<i>Carriage Inwards</i>	50,000	
<i>General Expenses</i>	70,000	
<i>Cash Discounts</i>	20,000	
<i>Bad Debts</i>	10,000	
<i>Motor Car</i>	2,40,000	
<i>Printing &amp; Stationary</i>	15,000	
<i>Furniture &amp; Fittings</i>	1,10,000	
<i>Advertisement</i>	85,000	
<i>Insurance</i>	45,000	
<i>Salesmen's Commission</i>	87,500	
<i>Postage &amp; Telephone</i>	57,500	
<i>Rent &amp; Taxes</i>	25,000	
<i>Salaries</i>	1,60,000	
<i>Drawings</i>	20,000	
<i>Capital Account</i>		14,43,000
<i>Purchase</i>	15,50,000	
<i>Sales</i>		19,87,500
<i>Stock on 1/4/2004</i>	2,50,000	
<i>Cash at bank</i>	60,000	
<i>Cash in hand</i>	10,500	
	36,30,500	36,30,500

**NOTES**

The following adjustments are to be made:

1. Stock on 31<sup>st</sup> March 2008 was valued at Rs.7,25,000.
2. A Provision for Bad and Doubtful Debts is to be created to the extent of 5% on sundry debtors.
3. Depreciate:
  - Furniture & Fittings by 10%*
  - Motor car by 20%*
4. John had withdrawn goods worth Rs.25,000 during the year.
5. Sales include goods worth Rs.75,000 sent out to Jolly brothers on approval and remaining unsold on 31<sup>st</sup> March, 2008. The cost of the goods was Rs.50,000.
6. The salesmen are entitled to a commission of 5% on total sales.
7. Debtors include Rs.25,000 Bad debts.
8. Printing and Stationery expenses of Rs.55,000 relating to 2006-2007 had not been provided in that year but was paid in this year by debiting outstanding liabilities.
9. Purchases include purchase of Furniture worth Rs.50,000.

**Solution:**

Trading and Profit and Loss A/c for the year ended 31/03/08

Dr

Cr

Particulars	Amount Rs.	Amount Rs.	Particulars	Amount Rs.	Amount Rs.
To Opening stock		2,50,000	By Sales	19,87,500	
To Purchase	15,50,000		(Less)	75,000	
			Goods sent on approval		19,12,500
Less: Drawings	25,000				
	15,25,000		By Closing Stock	7,25,000	
Less: Furniture	50,000		Add: Stock on approval (at cost)	50,000	
		14,75,000			7,75,000

**NOTES**

Particulars	Amount Rs.	Amount Rs.	Particulars	Amount Rs.	Amount Rs.
To Wages		1,00,000			
To Carriage Inwards		50,000			
To Gross Profit c/d		8,12,500			
		26,87,500			26,87,500
To Salaries		1,60,000	By Gross Profit b/d		8,12,500
To Rent & Taxes		25,000			
To Postage & Telephone		57,500			
To Insurance		45,000			
To Printing & Stationery		15,000			
To General Expenses		70,000			
To Depreciation :					
Furniture(11,000+5,000)		16,000			
Motor car		48,000			
To Salesmen's commission (5% on Rs.19,12,500)		95,625			
To Advertisement		85,000			
To Carriage outwards		1,10,000			
To Bad debts	10,000				
Add: Addl. Bad debts	25,000				
Add: Prov. for Bad debts (5% on Rs.4,00,000)	20,000				
		55,000			
Cash Discount		20,000			
To Net Profit		10,375			
		8,12,500			8,12,500

## Balance Sheet as on 31/03/08

## NOTES

Liabilities	Amount Rs.	Amount Rs.	Assets	Amount Rs.	Amount Rs.
Capital as on 1/4/2004	14,43,000		Furniture & Fittings	1,10,000	
Add: Net profit	10,375		Additional during the year	50,000	
	14,54,375			1,60,000	
Less: Drawings(20,000 +25,000)	45,000		Less: Depn.	16,000	
	14,08,375				1,44,000
Less: Printing & Stationery of last year	55,000		Motor Van	2,40,000	
		13,53,375	Less: Depn.	48,000	
					1,92,000
Sundry Creditors		2,00,000	Closing Stock (7,25,000+50,000)		7,75,000
Salesmen's Commission outstanding		8,125	Sundry Debtors	5,00,000	
			Less: Goods sent on Approval	75,000	
				4,25,000	
			Less: Addl. Bad debts	25,000	
				4,00,000	
			Less: Provision for Doubtful debts 5% on 4,00,000	20,000	
					3,80,000
			Cash at bank		60,000
			Cash in hand		10,500
		15,61,500			15,61,500

**Illustration 14:**

From the following Trial Balance of Sri Narayanan you are required to prepare a Trading and Profit & Loss A/c for the year ended 31<sup>st</sup> December 2008 and a Balance Sheet as on that date.

**NOTES**

<i>Debit balances</i>	<i>Amount Rs</i>	<i>Credit balances</i>	<i>Amount Rs</i>
<i>Stock on 1<sup>st</sup> Jan 2008</i>	<i>70,000</i>	<i>Capital</i>	<i>2,00,000</i>
<i>Plant &amp; Machinery</i>	<i>50,000</i>	<i>Wages Outstanding</i>	<i>4,000</i>
<i>Rent</i>	<i>3,000</i>	<i>Sales</i>	<i>5,00,000</i>
<i>Depreciation on Plant &amp; Machinery</i>	<i>5,000</i>	<i>Creditors</i>	<i>45,000</i>
<i>Drawings</i>	<i>40,000</i>	<i>Bills Payable</i>	<i>16,000</i>
<i>Wages</i>	<i>20,000</i>	<i>Discount (Cr)</i>	<i>12,000</i>
<i>Income tax</i>	<i>2,000</i>	<i>Bank Overdraft</i>	<i>9,000</i>
<i>Salary for 11 months</i>	<i>11,000</i>	<i>Commission (Cr)</i>	<i>8,000</i>
<i>Cash</i>	<i>5,000</i>	<i>Purchase return</i>	<i>5,000</i>
<i>Buildings</i>	<i>1,60,000</i>		
<i>Depreciation on Buildings</i>	<i>8,000</i>		
<i>Purchases</i>	<i>3,00,000</i>		
<i>Debtors</i>	<i>80,000</i>		
<i>Bills Receivable</i>	<i>30,000</i>		
<i>Discount (Dr)</i>	<i>2,000</i>		
<i>Carriage Inwards</i>	<i>4,000</i>		
<i>Bad debts</i>	<i>6,000</i>		
<i>Sales returns</i>	<i>3,000</i>		

**Adjustments:**

- i. *Stock on 31<sup>st</sup> Dec 2008 was Rs.96,000.*
- ii. *Stock destroyed by fire was Rs.6,000 and the insurance company accepted a claim for Rs.3,000.*
- iii. *Rs.1,600 paid as rent of the office was debited to Landlord account and was included in the list of Debtors.*
- iv. *Goods invoiced Rs.10,000 was sent to customers on sale or return basis on 28<sup>th</sup> Dec 2008, the customers still having the right to return the goods. The rate of gross profit was 1/5 of sale.*
- v. *Write off further bad debts Rs.4,000 and maintain 5% provision for bad debts on debtors.*
- vi. *One month's salary was outstanding.*

**Solution:**

Trading and Profit and Loss A/c of Sri Narayanan for the year ended 31/12/97

Dr

Cr

Particulars	Amount Rs.	Amount Rs.	Particulars	Amount Rs.	Amount Rs.
To Opening stock		70,000	By Sales	5,00,000	
To Purchases	3,00,000		(Less) Returns	3,000	
(Less) Returns	5,000			4,97,000	
		2,95,000	Less: Goods sent on sales return	10,000	
To Carriage Inwards		4,000	By Closing Stock	96,000	4,87,000
To Wages		20,000	Add: Stock with customers	8,000	
To Gross Profit c/d		2,08,000	Add: Stock destroyed	6,000	
					1,10,000
		5,97,000			5,97,000
To Salaries	11,000		By Gross Profits b/d		2,08,000
Add: Outstanding	1,000		By Discount		12,000
		12,000	By Commission		8,000
To Rent	3,000				
Add: Debited to Landlord	1,600				
		4,600			
To Discount		2,000			
To Bad debts	6,000				
Add: Further Bad debts	4,000				
		10,000			
Add: New Provision for Bad debts	3,220				
		13,220			
To Depreciation: Plant & Machinery		5,000			
Buildings		8,000			
To Loss on stock destroyed		2,400			
To Net profit – transferred to capital A/c		1,80,780			
		2,28,000			2,28,000

**NOTES**

**NOTES****Illustration 15:**

*From the following balances and information, prepare Trading and Profit & Loss Account of Mr.X for the year ended 31<sup>st</sup> March 2008 and a Balance Sheet as on that date:*

<i>Particulars</i>	<i>Debit Rs.</i>	<i>Credit Rs.</i>
<i>X's Capital Account</i>		<i>10,000</i>
<i>Plant &amp; Machinery</i>	<i>3,600</i>	
<i>Depn. On Plant &amp; Machinery</i>	<i>400</i>	
<i>Repairs to Plant</i>	<i>520</i>	
<i>Wages</i>	<i>5,400</i>	
<i>Salaries</i>	<i>2,100</i>	
<i>Income = Tax of Mr.X</i>	<i>100</i>	
<i>Cash in hand and at bank</i>	<i>400</i>	
<i>Land and Buildings</i>	<i>14,900</i>	
<i>Depreciation on Building</i>	<i>500</i>	
<i>Purchases</i>	<i>25,000</i>	
<i>Purchase Return</i>		<i>300</i>
<i>Sales</i>		<i>4,98,000</i>
<i>Bank Overdraft</i>		<i>760</i>
<i>Accrued Income</i>	<i>300</i>	
<i>Salaries Outstanding</i>		<i>400</i>
<i>Bills receivables</i>	<i>3,000</i>	
<i>Provision for Bad debts</i>		<i>1,000</i>
<i>Bills payable</i>		<i>1,600</i>
<i>Bad debts</i>	<i>200</i>	
<i>Discount on purchases</i>		<i>708</i>
<i>Debtors</i>	<i>7,000</i>	
<i>Creditors</i>		<i>6,252</i>
<i>Opening Stock</i>	<i>7,400</i>	
	<i>70,820</i>	<i>70,820</i>

**NOTES****Information:**

- i. Stock on 31<sup>st</sup> March 2008 was Rs.6,000
- ii. Write off further Rs.600 for Bad debts and maintain a provision for Bad debts at 5% on Debtors.
- iii. Goods costing Rs.1,000 were sent to customer for Rs.1,200 on 30<sup>th</sup> March 2008 on sale or return basis. This was recorded as actual sales.
- iv. Rs.240 paid as rent to the office were debited to Landlord account and were included in the list of debtors.
- v. General Management is to be given commission at 10% of net profit after charging the commission of the works manager and his own.
- vi. Works Manager is to be given commission at 12% of net profit before charging the commission of General Manager and his own.

**Solution:**

Trading and Profit and Loss A/c for the year ended 31/03/08

Dr			Cr		
Particulars	Amount Rs.	Amount Rs.	Particulars	Amount Rs.	Amount Rs.
To Opening stock		7,400			
To Purchase	25,000		By Sales	49,800	
Less: Returns	300		(Less) Sale on approval basis	1,200	
		24,700			48,600
To Wages		5,400	By Closing Stock	6,000	
To Gross profit c/d		18,100	Add: Stock with customer (at cost)	1,000	
					7,000
		55,600			55,600
To Repairs to plant		520	By Gross profit b/d		18,100
To Salaries		2,100	By Discount on purchases		708
To Rent		240	By Provision for Bad debts (1,000 – 248)		752
To Depreciation on: Plant & Machinery	400				
Building	500	900			
To Commission to Works Manager		1,800			

**NOTES**

To Commission to General Manager		1,200			
To Net profit – transferred to capital		12,000			
		19,560			19,560

**Balance Sheet of Mr.X as on 31/03/08**

Liabilities	Amount Rs.	Amount Rs.	Assets	Amount Rs.	Amount Rs.
Capital Account	10,000		Land & Building		14,900
Less: Income Tax	100		Plant & Machinery		3,600
	9,900		Stock in hand	6,000	
Add: Net profit	12,000		Add: Stock with customers	1,000	
		21,900			7,000
Bank Overdraft		760	Debtors	4,960	
Bills Payable		1,600	Less: Provision for Bad debts	248	
					4,712
Sundry Creditors		6,252	Bills Receivable		3,000
Salaries Outstanding			Accrued Income		300
: Works Manager	1,800		Cash in hand and at Bank		400
General Manager	1,200				
		3,000			
		33,912			33,912

**1.1.51 Manufacturing Account**

A Manufacturing concern will prepare a Manufacturing Account in addition to Trading and Profit and Loss Account.

The main purpose of preparing a Manufacturing account is to ascertain the cost of the goods manufactured. This cost of the goods produced is then transferred to Trading account. Here, Trading account will consist of opening stock of finished goods, cost of goods manufactured, net sales and closing stock of finished goods.

**1.1.52 Specimen of Manufacturing account**

Manufacturing A/c of \_\_\_\_\_ for the year ended \_\_\_\_\_

**NOTES**

Dr			Cr		
Particulars	Rs	Rs	Particulars	Rs	Rs
To Opening work-in-progress		Xxx	By Sale of scrap		Xxx
To Raw Materials Consumed:-			By Closing work-in-progress		Xxx
Opening stock of Materials	Xxx		By cost of goods manufactured (transferred to Trading A/c)		xxx
Add: Purchases	Xxx				
Less: Closing stock	Xxx				
		Xxx			
To Purchases expenses		Xxx			
To Import duty		Xxx			
To Freight		xxx			
To Wages		Xxx			
To Whom It May Concern: Carriage inwards		xxx			
To Depreciation on Machinery		Xxx			
		Xxx			Xxx

**Illustration 16:** Prepare a Manufacturing account and Trading account from the following data:-

**NOTES**

<i>Particulars</i>	<i>Amount Rs</i>	<i>Particulars</i>	<i>Amount Rs</i>
<i>Purchase of raw materials</i>	<i>6,000</i>	<i>Sales</i>	<i>50,000</i>
<i>Power</i>	<i>1,500</i>	<i>Wages</i>	<i>6,000</i>
<i>Finished goods [Opening]</i>	<i>10,000</i>	<i>Factory rent</i>	<i>800</i>
<i>Works-in-progress [Opening]</i>	<i>2,000</i>	<i>Sales returns</i>	<i>2,000</i>
<i>Carriage</i>	<i>200</i>	<i>Depreciation on Machinery</i>	<i>800</i>
<i>Return of raw materials</i>	<i>400</i>	<i>Factory Insurance</i>	<i>500</i>
<i>Raw materials [Opening]</i>	<i>5,000</i>	<i>Raw materials [Closing]</i>	<i>4,000</i>
<i>Repairs to Machinery</i>	<i>400</i>	<i>Work in progress [Closing]</i>	<i>3,200</i>
		<i>Finished goods [Closing]</i>	<i>16,000</i>

**Solution:****Manufacturing Account**

Dr			Cr		
<b>Particulars</b>	<b>Amount Rs.</b>	<b>Amount Rs.</b>	<b>Particulars</b>	<b>Amount Rs.</b>	<b>Amount Rs.</b>
To Opening stock WIP		2,000	By Closing WIP		3,200
To Raw materials consumed:			By cost of goods manufactured [transferred to Trading A/c]		15,600
Opening	5,000				
Add: Purchases	6,000				
Less: Returns	400				
Less: Closing	4,000				
		6,600			
To Factory rent		800			
To Carriage		200			
To Power		1,500			
To Repairs to machinery		400			
To wages		6,000			
To Depreciation on machinery		800			
To Factory Insurance		500			
		18,800			18,800

**NOTES**

Dr			Cr		
Particulars	Amount Rs.	Amount Rs.	Particulars	Amount Rs.	Amount Rs.
To Finished goods [Opening]		10,000	By Sales	50,000	
To Cost of goods manufactured (transferred from manf.A/c)		15,600	Less: Returns	2,000	
					48,000
To Gross Profit c/d		38,400	By Finished goods [Closing]		16,000
		64,000			64,000

**1.1.53 Revenue Recognition and Measurement**

Revenue is the inflow of cash or cash equivalent among from sale of goods or services or holding of an asset. Under accrual basis of accounting, revenue can be recognized only when it is legally due and realizable. Date of physical delivery of goods and actual receipt of cash is irrelevant for revenue recognition. Only upon passing of the title of the goods, revenue is recognized.

Receipt of advance cash from customer is not treated as revenue.

Thus, revenue can be recognized only,

- 1) When selling price of the goods or services is established, and
- 2) Legal ownership of the goods or services to the buyer, and
- 3) Seller is sure of realizing the amount from the buyer.

**1.1.54 Matching Revenues and Expenses**

Revenue earned in an accounting period should be matched with the expenses incurred in generating that revenue, in order to ascertain the resultant profit or loss.

All outstanding expenses, prepaid expenses, income due and income received in advance should be properly adjusted to arrive at the revenue earned and expenses incurred for generating that revenue.

In Trading account, direct expenses are matched with sales revenue to arrive at the resultant gross profit or gross loss.

In Profit and Loss account, indirect expenses [i.e. office, administration, selling and distribution expenses], are matched with gross profit and non-operating income in order to ascertain the net profit or net loss.

# NOTES

In Balance Sheet, resources generated are matched with the sources where such resources are deployed.

This concept of matching revenues with the relevant costs incurred constitutes the basis for accrual or mercantile system of accounting.

## 1.1.55 Inventory Pricing and Valuation

### 1.1.56 Meaning of Inventory

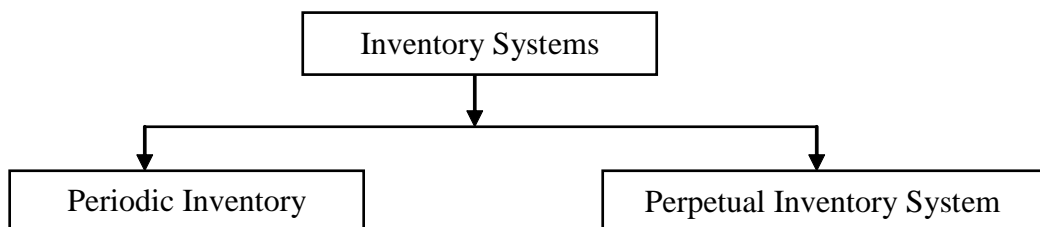
In manufacturing units, inventory means and include raw material, work-in-progress and finished goods. In the case of trading organisations, inventory include goods held for sale and office, packing and other supplies. All inventories are tangible.

### 1.1.57 Objectives of Inventory Valuation

1. To ascertain the correct purchase price
2. To calculate the cost of goods issued to production
3. To arrive at the closing inventory value. This significantly influences the gross profit or gross loss shown by Trading account.
4. To arrive at the correct financial position of the organisation by including the closing inventory value in the Balance Sheet.

### 1.1.58 Inventory System – Periodic and Perpetual

There are two ways of accounting for inventories as depicted below:



#### I. Periodic Inventory System:

Under this system, all purchases are recorded on a regular basis. Physical stock taking is done at the end of an accounting period and value is arrived at. Cost of material issued or goods sold is calculated by deducting closing inventory from the sum of opening inventory and purchases made during the accounting period. Stock not in hand is presumed to have issued or sold.

#### II. Perpetual Inventory System:

Under this method, all receipts and issue of materials, additions to or reduction in work-in-progress and finished are recorded on a continuous basis in the stores ledger.

Physical inventory is done on a continuous basis in such a way that all items in stock are physically counted atleast once in a year and compared with their respective book balances made in the stores ledger.

Thus, under this system, halting the receipts and issues of materials for physical verification of inventory at the end of the accounting period is avoided.

### 1.1.159 Steps involved in Inventory Valuation

- **Step1:** Physical counting and measurement of stock
- **Step2:** Ascertainment of cost and market price for each item in stock
- **Step3:** Valuing the inventory at cost or net realizable value whichever is less. [Net realizable value is the amount that can be realized after deducting all expenses which might be incurred for making sales. For instance, if the seller has to pay a commission of 5% on sales, the net realizable value of an item having a selling price of Rs.100 should be taken as Rs.95].

### 1.1.60 Methods of Pricing and Valuation of Inventories

Inventory should be valued at cost or net realizable value whichever is less. Cost price is arrived at by using any of the following inventory pricing method:

- 1) First-In-First-Out [FIFO] Method
- 2) Last-In-First-Out [LIFO] Method
- 3) Highest In First Out [HIFO] Method
- 4) Base Stock Method
- 5) Specific Price Method
- 6) Simple Average Price Method
- 7) Weighted Average Price Method
- 8) Replacement Price Method
- 9) Inflated Price Method
- 10) Standard Price Method

1. **First-In-First-Out [FIFO]:** Under this method, materials received first are issued first. When the first lot of materials purchased is exhausted the next lot is taken up for issue. It works on the presumption that old stock should be used first, and when it gets exhausted, new stock should be used. As a result, value of closing stock will be at the latest purchase price.
2. **Last- In-First-Out [LIFO]:** This is quite opposite to FIFO method. Here, materials received last are issued first. Under this method, materials issued to production will be charged at the latest price. But closing stock will be valued at old price. Thus, closing stock under this method will be understated

## NOTES

3. **Highest In First Out [HIFO]:** Under this method, highest priced materials in stock are issued first. When such stock gets exhausted, next highest priced materials are issued. This operates on the premises that consumption should be at the highest price while inventory should be valued at lowest possible price.
4. **Base Stock Method:** Any organisation will always maintain a minimum quantity of materials in stock. Such minimum quantity is called base stock. It is created out of the first lot purchased and is constantly valued at that price and carried forward. Quantity in excess of such base stock is issued and priced at FIFO or LIFO method.
5. **Specific Price Method:** This is used when materials are procured for a specific job. Such materials, when received are earmarked for that specific job for which purchased, and are issued to that particular job when requisition comes.
6. **Simple Average Price Method:** Here the issue price is arrived at by dividing the sum of rates of different materials in stock [from which materials could have been issued] by the number of rates used in numerator. For physical issue of materials, FIFO method is used.
7. **Weighted Average Price Method:** This operates on the premises that when once materials received are binned, they lose their individual identity. So, the issue price is arrived as follows:  

$$\text{Issue price} = \frac{\text{Total value of materials in stock}}{\text{Total quantity in stock}}$$
8. **Replacement Price Method:** Under this method, the materials issued are valued at a price at which they can be replaced.
9. **Inflated Price Method:** Here the issues are priced at purchase price plus losses due to contingencies like evaporation, wastage in handling and storing, carrying costs, etc.
10. **Standard Price Method:** Under this method, for each type of material, a standard issue price is worked out, and all the issues made are priced at such standard price. Any difference between the standard price and actual price, results in material price variance. If the actual price exceeds the standard, it is called unfavorable price variance. On the other hand, if the actual price is less than the standard price, it leads to favorable price variance.

### Illustration 17:

*From the following, prepare a stores ledger using (i)FIFO and (ii)LIFO.*

- 2008, Jan 1    *Opening balance 100 units at Rs.5/- each.*
- 2    *Received 500 units at Rs.6/- each.*
- 3    *Issued 300 units.*
- 4    *Issued 200 units.*
- 5    *Received back 10 units issued on 4<sup>th</sup> Jan.*
- 6    *Purchased 600 units at Rs.5/- each.*

**NOTES**

- 7 Issued 300 units.  
 8 Returned to supplier 50 units purchased on 6<sup>th</sup> Jan.  
 9 Issued 200 units.  
 10 Received 500 units at Rs.7/- per unit.  
 11 Issued 300 units.

Stock verification on 11<sup>th</sup> January revealed a shortage of 10 units.

**Solution:****First In First Out Method**

Date	Receipts			Issues			Balance		
	Quantity	Rate Rs.	Amount Rs.	Quantity	Rate Rs.	Amount Rs.	Quantity	Rate Rs.	Amount Rs.
1.1.08	-	-	-	-	-	-	100	5	500
2.1.08	500	6	3000	-	-	-	100	5	500
							500	6	3000
3.1.08	-	-	-	100	5	500	300	6	1800
				200	6	1200			
4.1.08	-	-	-	200	6	1200	100	6	600
5.1.08	10	6	60	-	-	-	100	6	600
							10	6	60
6.1.08	600	5	3000	-	-	-	100	6	600
							10	6	60
							600	5	3000
7.1.08	-	-	-	100	6	600	410	5	2050
				10	6	60			
				190	5	950			
8.1.08	-	-	-	50	5	250	360	5	1800
9.1.08	-	-	-	200	5	1000	160	5	800
10.1.08	500	7	3500	-	-	-	160	5	800
							500	7	3500
11.1.08	-	-	-	160	5	800	360	7	2520
				140	7	980			
11.1.08	-	-	-	10	7	70	350	7	2450

**Note:**

- Returns to godown is treated like a fresh receipt at the original price issued.
- Returns to supplier is treated like an issue but at the original purchase price.

## NOTES

## Last In First Out [LIFO]

Date	Receipts			Issues			Balance		
	Quantity	Rate Rs.	Amount Rs.	Quantity	Rate Rs.	Amount Rs.	Quantity	Rate Rs.	Amount Rs.
1.1.08	-	-	-	-	-	-	100	5	500
2.1.08	500	6	3000	-	-	-	100	5	500
							500	6	3000
3.1.08	-	-	-	300	6	1800	100	5	500
							200	6	1200
4.1.08	-	-	-	200	6	1200	100	5	500
5.1.08	10	6	60	-	-	-	100	5	500
							10	6	60
6.1.08	600	5	3000	-	-	-	100	5	500
							10	6	60
							600	5	3000
7.1.08	-	-	-	300	5	1500	100	5	500
							10	6	60
							300	6	3000
8.1.08	-	-	-	50	5	250	100	5	500
							10	6	60
							300	5	1250
9.1.08	-	-	-	200	5	1000	100	5	500
							10	6	60
							50	5	250
10.1.08	500	7	3500	-	-	-	100	5	500
							10	6	60
							50	5	250
							500	7	3500
11.1.08	-	-	-	300	7	2100	100	5	500
							10	6	60
							50	5	250
							200	7	1400
11.1.08	-	-	-	10	7	70	100	5	500
							10	6	60
							50	5	250
							190	7	1330

**Illustration 18:**

Active Oil Company closes its accounts at the end of each month. The following information is available for the month of June 2005: (Values in Rs)

Sales 2,50,000

Administrative expenses 5,000

Stock on 1<sup>st</sup> June, 50 tons at Rs.1000 50,000

Purchases including carriage inward:

## NOTES

10<sup>th</sup> June 150 tons at Rs.800

20<sup>th</sup> June 150 tons at Rs.900

Stock on 30<sup>th</sup> June, 100 tons

Compute the following data by the FIFO method:

(i) Inventory valuation on June 30.

(ii) Amount of cost of goods sold for June.

(iii) Profit or loss for June.

**Solution:**

**FIFO Method**

Date	Receipts			Issues			Balance		
	Quantity	Rate Rs.	Amount Rs.	Quantity	Rate Rs.	Amount Rs.	Quantity	Rate Rs.	Amount Rs.
1.6.05	-	-	-	-	-	-	50	1000	50,000
20.6.05	150	800	1,20,000	-	-	-	50	1000	50,000
							150	800	1,20,000
20.6.05	150	900	1,35,000	-	-	-	50	1000	50,000
							150	800	1,20,000
							150	900	1,35,000
Issues in June'05				50	1000	50,000			
				150	800	1,20,000			
				50	900	45,000	100	900	90,000
		Total	2,55,000			2,15,000			

(i) Closing inventory value on 30<sup>th</sup> June is Rs.90,000

(ii) Cost of goods sold for June 2005 is Rs.2,15,000

(iii) Calculation of Profit or Loss for June 2005:

	<i>Rs.</i>
<i>Sales</i>	<i>2,50,000 [Given]</i>
<i>(-)Cost of goods sold</i>	<i>2,15,000</i>
<i>(-)Administrative expenses</i>	<i>5000 [Given]</i>
<i>Profit</i>	<u><u>30,000</u></u>

**NOTES****Illustration 19:**

*Prepare a stores ledger account using FIFO.*

*2008, December*

- 1. Received 1000 units at Rs.20 each.*
- 2. Received 500 units at Rs.22 each.*
- 3. Received 200 units at Rs.21 each.*
- 4. Issued 500 units.*
- 5. Issued 150 units.*
- 6. Received 700 units at Rs.23 per unit.*
- 7. Received 300 units at Rs.19 each.*
- 8. Issued 500 units.*
- 9. Received 200 units at Rs.18 each.*
- 10. Issued 300 units*

**Solution:****Highest In First Out [FIFO]**

Date	Receipts			Issues			Balance		
	Quantity	Rate Rs.	Amount Rs.	Quantity	Rate Rs.	Amount Rs.	Quantity	Rate Rs.	Amount Rs.
1.12.08	1000	20	20,000	-	-	-	1000	20	20,000
2.12.08	500	22	11,000	-	-	-	1000 500	20 22	20,000 11,000
3.12.08	200	21	4,200	-	-	-	1000 500 200	20 22 21	20,000 11,000 4,200
4.12.08	-	-	-	500	22	11,000	1000 200	20 21	20,000 4,200
5.12.08	-	-	-	150	21	3,150	1000 50	20 21	20,000 1,050
6.12.08	700	23	16,100	-	-	-	1000 50 700	20 21 23	20,000 1,050 16,100
7.12.08	300	19	5,700	-	-	-	1000 50 700 300	20 21 23 19	20,000 1,050 16,100 5,700
8.12.08	-	-	-	500	23	11,500	1000 50 200 300	20 21 23 19	20,000 1,050 4,600 5,700
9.12.08	200	18	3,600	-	-	-	1000 50 200 300 200	20 21 23 19 18	20,000 1,050 4,600 5,700 3,600
10.12.08	-	-	-	200 50 50	23 21 20	4,600 1,050 1,000	950 300 200	20 19 18	19,000 5,700 3,600

**Illustration 20:**

From the following information open a stores ledger account under specific pricing with FIFO:

2007, February 1 Opening balance 50 Kgs at Rs.10.

2 Issued 30 Kgs.

4 Purchased 60 Kgs at Rs.11.

5 Purchase 50 Kgs at Rs.12 for job Y to be issued on 15<sup>th</sup> February.

6 Issued 25 Kgs.

7 Purchased 50 Kgs at Rs.10.

16 Issued 60 Kgs.

25 Purchased 25 Kgs at Rs.12.

28 Issued 35 Kgs.

**Solution:****Specific Pricing with FIFO**

Date	Receipts			Issues			Balance		
	Quantity	Rate Rs.	Amount Rs.	Quantity	Rate Rs.	Amount Rs.	Quantity	Rate Rs.	Amount Rs.
1.2.07	50	10	500	-	-	-	50	10	500
2.2.07	-	-	-	30	10	300	20	10	200
4.2.07	60	11	660	-	-	-	20	10	200
							60	11	660
5.2.07	50	12	600	-	-	-	20	10	200
							60	11	660
							50[Y]	12	600
6.2.07	-	-	-	20	10	200	55	11	605
				5	11	55	50[Y]	12	600
10.2.07	50	10	500	-	-	-	55	11	605
							50[Y]	12	600
							50	10	500
15.2.07	-	-	-	50[Y]	12	600	55	11	605
							50	10	500
16.2.07	-	-	-	55	11	605	45	10	450
				5	10	50			
25.2.07	25	12	300	-	-	-	45	10	450
							25	12	300
27.2.07	-	-	-	35	10	350	10	10	100
							25	12	300

**NOTES****Illustration 21:**

The following receipts and issues were made for a material during the month of July 2007.

**Receipts:**

- 1.7.07 Balance of stock 500 units at Rs.4.50  
 7.7.07 Purchases 400 units at Rs.5  
 15.7.07 Purchases 1000 units at Rs.5.50  
 23.7.07 Purchases 700 units at Rs.4.80

**Issues:**

- 3.7.07 Issued 200 units  
 8.7.07 Issued 100 units  
 17.7.07 Issued 700 units  
 26.7.07 Issued 700 units.

Assume that base stock is 200 units out of opening stock, use FIFO method.

**Solution:****Base stock with FIFO**

B = Base Stock

Date	Receipts			Issues			Balance		
	Quantity	Rate Rs.	Amount Rs.	Quantity	Rate Rs.	Amount Rs.	Quantity	Rate Rs.	Amount Rs.
1.7.07	-	-	-	-	-	-	500	4.50	2,250
3.7.07	-	-	-	200	4.50	900	300	4.50	1,350
7.7.07	400	50	2,000	-	-	-	300	4.50	1,350
							400	5.00	2,000
8.7.07	-	-	-	100	4.50	450	200[B]	4.50	900
							400	5.00	2,000
15.7.07	1000	5.50	5,500	-	-	-	200[B]	4.50	900
							400	5.00	2,000
							1000	5.50	5,500
17.7.07	-	-	-	400	5.00	2,000	200[B]	4.50	900
				300	5.50	1,650	700	5.50	5,500
23.7.07	700	4.80	3,360	-	-	-	200[B]	4.50	900
							700	5.50	5,500
							700	4.80	3,360
26.7.07	-	-	-	700	5.50	5,500	200[B]	4.50	900
							700	4.80	3,360

**Illustration 22:**

Show the stores ledger entries as they would appear using Simple Average Method:

2008			Units	Price
June	1	Balance in hand	300	2.00
	2	Purchased	200	2.20
	4	Issued	150	-
	6	Purchased	200	2.30
	11	Issued	150	-
	19	Issued	200	-
	22	Purchased	200	2.40
	27	Issued	150	-

**Solution:****Simple Average Method****Illustration 23:**

Date	Receipts			Issues			Balances			Working Note relating to Amt. Column				
	Qty	Rate Rs.	Amt Rs.	Qty	Rate Rs.	Amt Rs.	Qty	Rate Rs.	Amt Rs.					
1.6.08	-	-	-	-	-	-	300	2.00	600	600				
2.6.08	200	2.20	440	-	-	-	300	2.00	200	2.20	1,040	[600+440]		
4.6.08	-	-	-	150	2.10 $\left[ \frac{2.00+2.20}{2} \right]$	315	150	2.00	200	2.20	725	[1040-315]		
6.6.08	200	2.30	460	-	-	-	150	2.00	200	2.20	200	2.30	1185	[725+460]
11.6.08	-	-	-	150	2.1667 $\left[ \frac{2.00+2.20+2.30}{3} \right]$	325	200	2.20	200	2.30	860	[1185-325]		
19.6.08	-	-	-	200	2.25 $\left[ \frac{2.20+2.30}{2} \right]$	450	200	2.30	-	-	410	[860-450]		
22.6.08	200	2.40	480	-	-	-	200	2.30	200	2.40	890	[410+480]		
27.6.08	-	-	-	150	2.35 $\left[ \frac{2.30+2.40}{2} \right]$	352.50	50	2.30	200	2.40	537.50	[890-352.50]		

**NOTES**

Using the receipts and issue details given in Illustration 22. Prepare stores ledger card using Weighted Average Method.

**Solution:**

Date	Receipts			Issues			Balances			Working Note relating to Amt. Column
	Qty	Rate Rs.	Amt Rs.	Qty	Rate Rs.	Amt Rs.	Qty	Rate Rs.	Amt Rs.	
1.6.08	-	-	-	-	-	-	300	2.00	600	
2.6.08	200	2.20	440	-	-	-	500	2.08	1040	[600+440]
4.6.08	-	-	-	150	2.08	312	350	2.08	728	[1040-312]
6.6.08	200	2.30	460	-	-	-	550	2.16	1188	[728+460]
11.6.08	-	-	-	150	2.16	324	400	2.16	864	[1188-324]
19.6.08	-	-	-	200	2.16	432	200	2.16	432	[864-432]
22.6.08	200	2.40	480	-	-	-	400	2.28	912	[432+480]
27.6.08	-	-	-	150	2.28	342	250	2.28	570	[912-342]

Note: Relating to three columns given under “Balance” Column:

- Column 1: Receipts are added to previous day’s balance, while Issues are subtracted from previous days balance.
- Column 3: Got as per the workings given in “Working Note” Column.
- Column 2: Rate is got by dividing column 3 by column 1.

**Illustration 24:**

The standard price of a material is fixed at Rs.20 per unit. Prepare stores ledger account using Standard Price Method and calculate material price variance .

2005, August		Units	Rate(Rs.)
1	Balance in hand	400	20
4	Purchased	500	21
6	Issued	600	-
8	Issued	200	-
10	Purchased	700	19
12	Issued	150	-
14	Issued	200	-
16	Issued	100	-
19	Purchased	800	22
20	Issued	400	-
25	Issued	300	-

**Solution:**

Calculation of Material Price Variance:

Date	Receipts			Issues			Balances			Working Note relating to Amt.Column
	Qty	Rate Rs.	Amt Rs.	Qty	Rate Rs.	Amt Rs.	Qty	Rate Rs.	Amt Rs.	
1.8.05	-	-	-	-	-	-	400	20	8,000	
4.8.05	500	21	10,500	-	-	-	900	-	18,500	[8,000+10,500]
6.8.05	-	-	-	600	20	12,000	300	-	6,500	[18,500-12,000]
8.8.05	-	-	-	200	20	4,000	100	-	2,500	[6,500-4,000]
10.8.05	700	19	13,300	-	-	-	800	-	15,800	[2,500+13,300]
12.8.05	-	-	-	150	20	3,000	650	-	12,800	[15,800-3,000]
14.8.05	-	-	-	200	20	4,000	450	-	8,800	[12,800-4,000]
16.8.05	-	-	-	100	20	2,000	350	-	6,800	[8,800-2,000]
19.8.05	800	22	17,600	-	-	-	1,150	-	24,400	[6,800+17,600]
20.8.05	-	-	-	400	20	8,000	750	-	16,400	[24,400-8,000]
25.8.05	-	-	-	300	20	6,000	450	-	10,400	[16,400-6,000]
Total	2000		41,400							

$$\begin{aligned}
 \text{Price Variance} &= [\text{Total Receipts} * \text{Standard Price}] - \text{Actual Receipt Amount} \\
 &= [2000 \text{ units} * \text{Rs.20}] - \text{Rs.41,400} \\
 &= \text{Rs.40,000} - \text{Rs.41,400} \\
 &= \text{Rs.1,400 [Adverse]}
 \end{aligned}$$

# NOTES

## 1.1.61 Fixed Assets and Depreciation Accounting

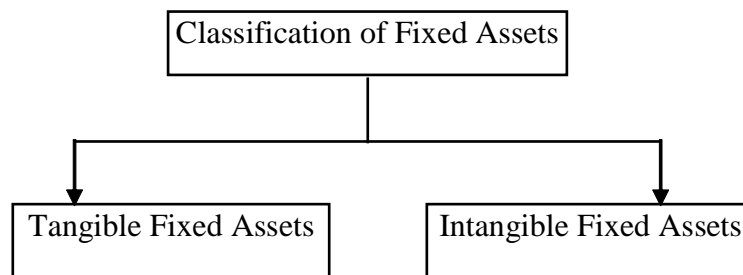
### 1.1.62 Fixed Assets – Meaning

Fixed Assets are those properties or rights acquired for permanent use in the business, and are not held for resale in the normal course of business. The business unit earns its revenue by making use of these fixed assets.

*Examples of fixed assets are: Machinery, Building, Furniture, Land, etc.,*

Note: All fixed assets except land are subject to depreciation. Land is the only fixed asset not subject to depreciation because it has infinite lifespan.

### 1.1.63 Classification of Fixed Assets



- (i) **Tangible Fixed Assets:** These refer to those fixed assets which have physical existence, i.e. they can be seen and touched. Examples are, Land, Building, Plant and Machinery, Furniture and Fixtures, etc.
- (ii) **Intangible Fixed Assets:** These are fixed assets which have no physical existence, i.e. they cannot be seen and touched. Examples are: Goodwill, Patent, Trademark, Copyright

### 1.1.64 Meaning of Depreciation

Depreciation means permanent reduction in the value of a fixed asset used in the business due to wear and tear, passage of time, obsolescence, and accidents.

Depreciation is treated as a revenue loss and is charged to Profit and Loss account in order to arrive at the true profit and to show the asset at its correct value in the Balance Sheet.

### 1.1.65 Depreciation Accounting – Defined

It is primarily concerned with a systematic distribution of the cost of an asset over the estimated useful life of such asset.

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

#### **1.1.66 Objectives of Providing Depreciation**

- To ascertain the true profit or loss.
- To disclose true financial position by showing the assets at its true value in the balance sheet.
- To find out the correct cost of production.
- To recover the cost incurred on fixed assets over its useful life.
- To facilitate purchase of new asset upon disposal of old one.

#### **1.1.67 Factors involved in calculating depreciation**

- Total cost of the asset inclusive of freight, insurance and installation charges.
- Estimated residual or scrap value at the end of its commercial life less cost incurred in disposing off the asset.
- Estimated effective working life or legal life, whichever is shorter.

#### **1.1.68 Depreciation, Depletion and Amortization – Distinguished**

Depreciation is concerned with spreading the cost of tangible fixed assets over their expected useful life.

Depletion refers to the extent of exhaustion, during an accounting period, of natural resources like minerals, granite oil, etc., from mines, quarries, oil fields, etc.,

Amortization is concerned with writing off of cost of intangible fixed assets [example: copy right, patent, trademark, etc] over their legal life.

#### **1.1.69 Methods of Providing Depreciation**

The following methods are used for calculating the amount of depreciation for each year:

- i. Straight line method or Fixed Installment method.
- ii. Written down value or Diminishing balance method.
- iii. Annuity method.
- iv. Revaluation method.
- v. Depletion method.
- vi. Machine hour rate method.

# NOTES

- vii. Sum of years digits method.
- viii. Insurance Policy method.
- ix. Sinking Fund method or Depreciation Fund method.

**[1] Straight line or Fixed installment method:**

Under this method, an equal amount of depreciation is charged every year so as to reduce the asset account to nil balance or to its scrap value at the end of the estimated life of the asset.

**[2] Written down value or Diminishing balance method:**

Here, depreciation is charged at a fixed percentage on the value at which the asset stands in the books at the beginning of every accounting period. In this method, the amount of depreciation goes on declining year after year.

**[3] Annuity method:**

Under this method, the amount expended on acquiring an asset is treated as an investment, yielding interest. Interest is calculated at a specific rate on the diminishing balance of the asset and is debited to asset account. Depreciation amount is calculated with the help of annuity table and is credited to asset account.

The following entries are passed:

When asset is purchased	Asset A/c	Dr
	To Bank	
For Charging interest	Asset A/c	Dr
	To Interest A/c	
For Charging depreciation	Depreciation A/c	Dr
	To Asset A/c	

**[4] Revaluation Method:**

This method is followed where the assets are of small value, like loose tools. Under this method, the asset is revalued at the end of the accounting year. This value is compared with the opening balance of the asset at the beginning of the year. The difference is treated as depreciation.

**[5] Depletion Method:**

This is suitable for mines and quarries. Depreciation per unit of output is ascertained by dividing the total cost by the estimated total output likely to be available.

The amount of depreciation to be charged for a particular year is calculated by multiplying the units of output extracted during that specific year with the depreciation per unit of output.



**NOTES**

2. For transferring the profit on Insurance policy :  
 Depreciation Insurance Policy A/c    Dr    ]  
 To Depreciation Reserve A/c
3. For transferring the accumulated depreciation to old asset :  
 Depreciation Reserve A/c    Dr  
 To Old Asset A/c
4. For purchase of new asset :  
 New Asset A/c    Dr  
 To Bank A/c

**[9] Sinking Fund Method or Depreciation Fund Method:**

Under this method, the amount set aside as depreciation is invested in some securities carrying a specific rate of interest. Interest received from such securities is also invested together the amount set aside for depreciation.

When asset becomes due for replacement at the end of its life, the securities are sold. The money thus realized, is used for purchasing a new asset.

**Accounting entries** are as follows:

## a. First Year:

For Purchase of asset	Asset A/c    Dr
	To Bank A/c
For Providing annual depreciation	Depreciation A/c    Dr
	To Depreciation Fund A/c
For Investing the amount	Depreciation Fund Investment A/c    Dr
	To Bank A/c

## b. Subsequent Years:

For receipt of interest	Bank A/c    Dr
	To Interest on Dep. Fund Investment A/c
For transferring the interest	Interest on Dep. Fund Investment A/c    Dr
	To Depreciation Fund A/c
For providing depreciation	Depreciation A/c    Dr
	To Depreciation Fund A/c
For investing the amount along with interest	Depreciation Fund Investment A/c    Dr
	To Bank A/c

c. Final Year:

For sale of investment	Bank A/c	Dr	
	To Dep. Fund Investment A/c		
For transferring profit or loss on sale of investment	In case of Profit:		
	Dep. Fund Investment A/c	Dr	
	To Depreciation Fund		
	In case of Loss:		
	Depreciation Fund A/c	Dr	
	To Dep. Fund Investment A/c		
For closing the asset amount	Depreciation Fund A/c	Dr	
	To Old Asset A/c		

First three entries given under subsequent years will be passed. No investment is made in the last year. In addition, the following entries are passed:

Balance, if any, available in the Depreciation Fund account will be transferred to Profit and Loss account.

#### Illustration 25: Straight Line Method

*An asset is purchased for Rs.50,000. Depreciation is to be provided annually according to Straight Line Method. The useful life of the asset is 5 years and the residual value is 5,000. You are required to find out the rate of depreciation and prepare asset account for the first three years.*

#### Solution:

##### (a) Determination of the amount of depreciation:

$$\frac{\text{Cost of asset} - \text{Scrap Value}}{\text{Life of the asset}} = \frac{\text{Rs. } 50,000 - \text{Rs. } 5,000}{5 \text{ years}} = \text{Rs. } 9,000 \text{ per year}$$

##### (b) Determination of rate of depreciation:

$$\frac{\text{Depreciation amount}}{\text{Original cost of asset}} \times 100 = \frac{\text{Rs. } 9,000}{\text{Rs. } 50,000} \times 100 = 18\%$$

## NOTES

Dr		Asset A/c		Cr	
Date	Particulars	Amount Rs.	Date	Particulars	Amount Rs.
1 <sup>st</sup> Year	To Bank	50,000	1 <sup>st</sup> Year	By Depreciation	9,000
			1 <sup>st</sup> Year	By bal c/d	41,000
		50,000			50,000
2 <sup>nd</sup> Year	To bal b/d	41,000	2 <sup>nd</sup> Year	By Depreciation	9,000
			2 <sup>nd</sup> Year	By bal c/d	32,000
		41,000			41,000
3 <sup>rd</sup> Year	To bal b/d	32,000	3 <sup>rd</sup> Year	By Depreciation	9,000
			3 <sup>rd</sup> Year	By bal c/d	23,000
		32,000			32,000
4 <sup>th</sup> Year	To bal b/d	23,000			

**Illustration 26: Fixed Installment method**

A company whose accounting year is the calendar year, purchased on 1<sup>st</sup> April 2004 machinery costing Rs.60,000. It purchased further machinery on 1<sup>st</sup> October 2004 costing Rs.40,000 and on 1<sup>st</sup> July 2005 costing Rs.20,000. On 1<sup>st</sup> January 2006, one third of the machinery installed on 1<sup>st</sup> April 2004 became obsolete and was sold for Rs.6,000. Show how machinery account would appear in the books of the company for three years, assuming that machinery was depreciated by Fixed Installment method at 10% per annum.

**Solution:**

Dr		Machinery A/c		Cr	
Date	Particulars	Amount Rs.	Date	Particulars	Amount Rs.
1.4.04	To Bank	60,000	31.12.04	By Depreciation $\left[ \frac{10}{100} \times 60000 \times \frac{9}{12} \right]$	5,500
				+	
				$\left[ \frac{10}{100} \times 40000 \times \frac{3}{12} \right]$	
1.10.04	To Bank	40,000	31.12.04	By bal c/d	94,500
		1,00,000			1,00,000
1.1.05	To bal b/d	94,500	31.12.05	By Depreciation $\left[ \frac{10}{100} \times 1,00,000 \right]$	11,000
				+	
				$\left[ \frac{10}{100} \times 20,000 \times \frac{6}{12} \right]$	

**NOTES**

1.7.05	To Bank	20,000	31.12.05	By bal c/d	1,03,500
		1,14,500			1,14,500
1.1.06	To bal b/d	1,03,500	1.1.06	By Bank [Sale]	6,000
			1.1.06	By P&L A/c [Loss]	10,500
			31.12.06	By Depreciation [10% on Rs.1,00,000]	10,000
			31.12.06	By bal c/d	77,000
		1,03,500			1,03,500
1.1.07	To bal b/d	77,000			

**Working Notes:**

*Calculation of Profit/loss on sale of 1/3 of machinery. Values in Rs.*

Value of machinery [1/3 * Rs.60,000]	20,000
Less: Depreciation for 2004 [for 9 months from 1.4.04 to 31.12.04]	1,500
Depreciation for 2005	2,000
Written down value of machinery on 1/1/06	16,500
Less: Sale value	6,000
Loss, charged to P&L A/c	10,500

**Illustration 27: Diminishing Balance Method:**

*A company purchased a plant for Rs.10,000. It is expected that its useful life will be 3 years and salvage value Rs.1,000. Calculate rate of depreciation and amount of depreciation to be provided in the first year as per Written Down Value method.*

**Solution:**

$$r = 1 - \sqrt[n]{\frac{s}{c}} \times 100 \quad \text{Where } r = \text{Rate of Depreciation}$$

n = Useful life in years

s = Salvage value

c = Cost of asset

$$r = 1 - \sqrt[3]{\frac{1000}{10000}} \times 100 = 53.6\%$$

Amount of depreciation for first year = 53.6% on Rs.10,000 = Rs.5,360.

# NOTES

## Illustration 28:

on 30<sup>th</sup> June 2004 it acquired additional machinery at a cost of Rs.2,000. On 31<sup>st</sup> March 2005 one of the original machines which had cost of Rs.500 was found to have become obsolete and was sold as scrap for Rs.50. It was replaced on that date by a new machine costing Rs.800. Charge depreciation on 15% per annum on WDV basis and prepare ledger account for first three years.

### Solution:

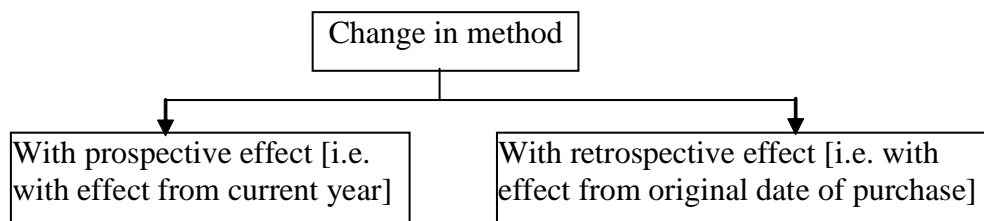
Dr			Machinery A/c		Cr	
Date	Particulars	Amount Rs.	Date	Particulars	Amount Rs.	
1.1.03	To Bank	12,000	31.12.03	By Depreciation [15% on 12,000]	1,800	
			31.12.03	By bal c/d	10,200	
		12,000			12,000	
1.1.04	To bal b/d	10,200	31.12.04	By Depreciation $\left[\frac{5}{100} \times 10,200\right] + \left[\frac{15}{100} \times 2,000 \times \frac{6}{12}\right]$	1,680	
30.6.04	To Bank	2,000	31.12.04	By bal c/d	10,520	
		12,200			12,200	
1.1.05	To bal c/d	10,520	31.3.05	By Depreciation on Machines sold	14	
31.3.05	To Bank	800	31.3.05	By bank [sale]	50	
			31.3.05	By P&L A/c [loss]	297	
			31.12.05	By Depreciation $\left[\frac{5}{100} \times (10,520 - 361)\right] + \left[\frac{15}{100} \times 800 \times \frac{9}{12}\right]$	1,614	
			31.12.05	By bal c/d	9,345	
		11,320			11,320	

Working Note:

	Rs.
Cost on 1.1.03	500
Less: Depreciation @ 15% for 2003	75
WDV on 1.1.04	425
Less: Depreciation @ 15% on Rs.425 for 2004	64
WDV on 1.1.06	361
Less: Depreciation for 3 months (1.1.06 to 31.3.06)	14
WDV on 31.3.05	347
Less: Sale value	50
Loss	297

### Change of Depreciation Method:

An organisation can change the method of depreciation from SLM to WDV method or vice versa. Such a change can be effected prospectively or retrospectively as shown below.



### Accounting Treatment:

- I. **Change with prospective effect:** Since the depreciation is with effect from current year only, new method will be followed from the current year only.
- II. **Change with retrospective effect:** Following are the steps:
  - a. Open a Working Note, and calculate the book value of asset as per new depreciation method from the date of purchase to the present date.
  - b. Compare this new value with the written down book value under old method shown in asset account.
  - c. If, New value > Old value, then debit asset account with the difference, Old value > New value, then credit asset account with the difference.

### Illustration 29:

*Arul started a business on 1/1/2000 and purchased a machine for Rs.1,40,000. He purchased further machinery on 1/8/01 costing Rs.30,000 and on 30/9/04 costing Rs.40,000. He follows a policy of charging depreciation at 15% p.a. under WDV method. On 1/1/04, it was decided to change the method and rate of depreciation to*

**NOTES**

10% on SLM basis with retrospective effect from 1/1/2000. Accounts are closed every year on 31<sup>st</sup> December. Show the Machinery A/c from the year 2000 to 2004.

**Solution:**

Dr		Machinery A/c		Cr	
Date	Particulars	Amount Rs.	Date	Particulars	Amount Rs.
1.1.00	To Bank	1,40,000	31.12.00	By Depreciation [15% on 1,40,000]	21,000
			31.12.00	By bal c/d	1,19,000
		1,40,000			1,40,000
1.1.01	To bal b/d	1,19,000	31.12.01	By Depreciation $\left[ \frac{5}{100} \times 1,19,200 \right]$ + $\left[ \frac{15}{100} \times 30,000 \times \frac{5}{12} \right]$	19,725
1.8.01	To Bank	30,000	31.12.01	By bal c/d	1,29,275
		1,49,000			1,49,000
1.1.02	To bal b/d	1,29,275	31.12.02	By Depreciation [15% on Rs.1,29,275]	19,391
			31.12.02	By bal c/d	1,09,884
		1,29,275			1,29,275
1.1.03	To bal b/d	1,09,884	31.12.03	By Depreciation [15% on 1,09,884]	16,483
			31.12.03	By bal c/d	93,401
		1,09,884			1,09,884
1.1.04	To bal b/d	93,401	31.12.04	By Depreciation $\left[ \frac{10}{100} \times 1,70,000 \right]$ + $\left[ \frac{10}{100} \times 40,000 \times \frac{3}{12} \right]$	18,000
1.1.04	To P & L A/c [Adjustment for change in method of Dep. : 1,06,750 – 93,401]	13,349	31.12.04	By bal c/d	1,28,750
30.9.04	To Bank	40,000			
		1,46,750			1,46,750
1.1.05	To bal b/d	1,28,750			

**NOTES**

Working Note:

Calculation of value of machinery from 1/1/2000 to 1/1/2004 under SLM basis at 10% p.a.:

	Rs.
Cost of machinery on 1/1/2000	1,40,000
Less: Depreciation for the year 2000 at 10% p.a.	<u>14,000</u>
Book value on 1/1/01	1,26,000
Add: Additions on 1/8/01	<u>30,000</u>
	1,56,000
Less: Depreciation for the year 2001	15,250
$\left[ \frac{10}{100} \times 1,40,000 \right] + \left[ \frac{10}{100} \times 30,000 \times \frac{5}{12} \right]$	<u>                    </u>
Book value on 1/1/02	1,40,750
Less: Depreciation for the year 2002 [10% on 1,70,000]	<u>17,000</u>
Book value on 1/1/03	1,23,750
Less: Depreciation for the year 2003 [10% on 1,70,000]	<u>17,000</u>
Book value on 1/1/04	<u>1,06,750</u>

**Illustration 30: Annuity Method:**

*A land lease was acquired on 1<sup>st</sup> January 2002 at a cost of Rs.30,000. It was decided to depreciate it under the annuity method at 5% interest. Annuity table shows that at 5% Re.1 over 5 years is equivalent to Re.0.230975 annually. Write up the lease account for 5 years.*

**Solution:**

To write off Rs.30,000, the amount to be written off every year is :-

$$\text{Rs.30,000} * 0.230975 = \text{Rs.6929.25 or Rs.6929}$$

**NOTES**

Dr		Lease Account		Cr	
Date	Particulars	Amount Rs.	Date	Particulars	Amount Rs.
1.1.02	To Bank	30,000	31.12.02	By Depreciation	6,929
31.12.02	To Interest [5% on 30,000]	1,500	31.12.02	By bal c/d	24,571
		31,500			31,500
1.1.03	To bal b/d	24,571	31.12.03	By Depreciation	6,929
31.12.03	To Interest [5% on 24,571]	1,228	31.12.03	By bal c/d	18,870
		25,799			25,799
1.1.04	To bal b/d	18,870	31.12.04	By Depreciation	6,929
31.12.04	To Interest [5% on 18,870]	943	31.12.04	By bal c/d	12,884
		19,813			19,813
1.1.05	To bal b/d	12,884	31.12.05	By Depreciation	6,929
31.12.05	To Interest [5% on 12,884]	644	31.12.05	By bal c/d	6,599
		13,528			13,528
1.1.06	To bal b/d	6,599	31.12.06	By Depreciation	6,929
31.12.06	To Interest [5% on 6599]	330			
		6,929			6,929

**Illustration 31: Revaluation Method:**

*On 1.1.2008 X Ltd had a stock of loose tools valued at Rs.16,000. On 1.7.08 they purchase additional loose tools amounting to Rs.10,000. On 31.12.08, the entire stock of loose tools were valued at Rs.21,000 after considering the following (i) tools worth Rs.1,000 was sold for Rs.900 (ii) tools worth Rs.300 were stolen by workers. Show loose tools account.*

**Solution:****NOTES**

Dr		Loose Tools A/c		Cr	
Date	Particulars	Amount Rs.	Date	Particulars	Amount Rs.
1.1.08	To bal b/d	16,000	31.12.08	By bank [Sale proceeds]	900
1.7.08	To Bank	10,000	31.12.08	By P&L A/c [loss on sale]	100
			31.12.08	By P&L A/c [loss by theft]	300
			31.12.08	By Depreciation	3,700
			31.12.08	By bal c/d	21,000
		26,000			26,000

**Illustration 32: Depletion Method:**

ABC Ltd. Leased on 1/1/03 an ore mine for Rs.5,00,000. It was estimated that the

Year	Tonnes
2003	5,000
2004	20,000
2005	16,000

total quantity of ore in the mine is 1,00,000 tonnes. The annual output was as follows:

Using depletion method of depreciation, show mine account for three years.

**Solution:**

$$\text{Depreciation rate per tonne} = \frac{\text{Cost of asset}}{\text{Total quantity of extraction}}$$

$$= \frac{\text{Rs. 5,00,000}}{1,00,000 \text{ tonnes}} = \text{Rs. 5 per tonne}$$

## NOTES

Dr			Mine Account		Cr
Date	Particulars	Amount Rs.	Date	Particulars	Amount Rs.
1.1.03	To Bank	5,00,000	31.12.03	By Depreciation [5,000 * Rs.5]	25,000
			31.12.03	By bal c/d	4,75,000
		5,00,000			5,00,000
1.1.04	To bal b/d	4,75,000	31.12.04	By Depreciation [2,000 * Rs.5]	1,00,000
			31.12.04	By bal c/d	3,75,000
		4,75,000			4,75,000
1.1.05	To bal b/d	3,75,000	31.12.05	By Depreciation [16,000 * Rs.5]	80,000
			31.12.05	By bal c/d	2,95,000
		3,75,000			3,75,000
1.1.06	To bal b/d	2,95,000			

**Illustration 33: Machine Hour Rate Method:**

A machine was purchased on 1<sup>st</sup> January 2004 at a cost of Rs.1,10,000 and the cost of installation being Rs.14,000. It is expected to work for 1,00,000 hours. The scrap value may be Rs.4,000. During the year 2004, the machine worked for 1200 hours and in 2005 for 1300 hours. Calculate the depreciation for 2004 and 2005.

**Solution:**

$$\text{Cost of the machine} = \text{Rs.1,10,000} + \text{Rs.14,000}$$

$$= \text{Rs.1,24,000}$$

$$\text{Scrap Value} = \text{Rs.4,000}$$

$$\text{Estimated working life} = 1,00,000 \text{ hours}$$

$$\text{Depreciation rate per hour} = \frac{\text{Cost of asset} - \text{Scrap value}}{\text{Total working hours}}$$

$$= \frac{\text{Rs.1,24,000} - \text{Rs.4,000}}{1,00,000 \text{ hours}}$$

$$= \text{Rs.1.20 per hour}$$

Depreciation for 2004 = 1200 hour \* Rs.1.20 = Rs.1,440

Depreciation for 2005 = 1300 hour \* Rs.1.20 = Rs.1,560

**Illustration 34: Sum of the digits method:**

*A machine was purchased for Rs.30,000 on 1<sup>st</sup> January 2005. Find out the depreciation under the sum of the digits method assuming its useful life to be 3 years.*

**Solution:**

Depreciation is calculated by using:

$$\frac{\text{Re maining life of the asset [including current year]}}{\text{Sum of the digits representing the life of the asset in years}} * \text{Cost of the asset}$$

$$\text{1st Year 2005} = \frac{3}{3 + 2 + 1} * 30,000 = \frac{3}{6} * 30,000 = \text{Rs. 15,000}$$

$$\text{2nd Year 2006} = \frac{2}{6} * 30,000 = \text{Rs. 10,000}$$

$$\text{3rd Year 2007} = \frac{1}{6} * 30,000 = \text{Rs.5,000}$$

**Illustration 35: Insurance Policy Method:**

*X Ltd purchases a lease for 3 years for Rs.65,000 on 1/1/2004. It decides to provide for its replacement by means of an insurance policy for Rs.65,000. The annual premium is Rs.20,000. On 1/1/07, the lease is renewed for a further period of 2 years for Rs.70,000. Show the necessary ledger accounts.*

**NOTES****Solution:**

Dr		Lease Account		Cr	
Date	Particulars	Amount Rs.	Date	Particulars	Amount Rs.
1.1.04	To Bank	65,000	31.12.03	By bal c/d	65,000
		65,000			65,000
1.1.05	To bal b/d	65,000	31.12.05	By bal c/d	65,000
		65,000			65,000
1.1.06	To bal b/d	65,000	31.12.05	By Depreciation Reserve A/c	65,000
		65,000			65,000

Dr		Lease [New] Account		Cr	
Date	Particulars	Amount Rs.	Date	Particulars	Amount Rs.
1.1.07	To Bank	70,000			

Dr		Depreciation Reserve A/c		Cr	
Date	Particulars	Amount Rs.	Date	Particulars	Amount Rs.
31.12.04	To bal c/d	20,000	31.12.04	By P&L A/c	20,000
		20,000			20,000
31.12.05	To bal c/d	40,000	1.1.05	By bal b/d	20,000
		40,000	31.12.05	By P&L A/c	20,000
		40,000			40,000
31.12.06	To Lease A/c	65,000	1.1.06	By bal b/d	40,000
		65,000	31.12.06	By P&L A/c	20,000
			31.12.06	By Depreciation Insurance Policy	5,000
					65,000

Dr    Depreciation Insurance Policy A/c    Cr

Date	Particulars	Amount Rs.	Date	Particulars	Amount Rs.
1.1.04	To Bank [Premium]	20,000	31.12.04	By bal c/d	20,000
		20,000			20,000
1.1.05	To bal b/d	20,000	31.12.05	By bal c/d	40,000
1.1.05	To Bank [Premium]	20,000			
		40,000			40,000
1.1.06	To bal b/d	40,000	31.12.06	By bank	65,000
1.1.06	To Bank [Premium]	20,000			
31.12.06	To Depreciation Reserve A/c	5,000			
		65,000			65,000

## NOTES

### Illustration 36: Sinking Fund or Depreciation Fund Method:

On 1/1/01, a trader purchases a three year lease of premises for Rs.30,000 and it is decided to make provision for replacement by means of depreciation fund. The expected rate of interest on the investment is 5% per annum. The sinking fund table shows that Rs.0.317208 at 5% will in 3 years accumulate Re.1. Assume the investment is sold for Rs.20,000. Open necessary ledger accounts for all three years.

### Solution:

$$\text{Depreciation} = \text{Rs.}30,000 * 0.317208 = \text{Rs.}9,516$$

Dr    Lease A/c    Cr

Date	Particulars	Amount Rs.	Date	Particulars	Amount Rs.
1.1.01	To Bank	30,000	31.12.01	By bal c/d	30,000
		30,000			30,000
1.1.02	To bal b/d	30,000	31.12.02	By bal c/d	30,000
		30,000			30,000
1.1.03	To bal b/d	30,000	31.12.03	By Depreciation Fund A/c	30,000
		30,000			30,000

**NOTES**

Dr			Depreciation A/c			Cr		
Date	Particulars	Amount Rs.	Date	Particulars	Amount Rs.			
31.12.01	To Dep. Fund	9,516	31.12.01	By P&L A/c	9,516			
		9,516			9,516			
31.12.02	To Dep. Fund	9,516	31.12.02	By P&L A/c	9,516			
		9,516			9,516			
31.12.03	To Dep. Fund	9,516	31.12.03	By P&L A/c	9,516			
		9,516			9,516			

Dr			Interest on Dep. Fund Investment A/c			Cr		
Date	Particulars	Amount Rs.	Date	Particulars	Amount Rs.			
31.12.02	To Dep. Fund	476	31.12.02	By Bank [5% on 9,516]	476			
		476			476			
31.12.03	To Dep. Fund	976	31.12.03	By Bank [5% on 19,508]	976			
		976			976			

Dr			Depreciation Fund A/c			Cr		
Date	Particulars	Amount Rs.	Date	Particulars	Amount Rs.			
31.12.01	To bal c/d	9,516	31.12.01	By Dep	9,516			
		9,516			9,516			
31.12.02	To bal c/d	19,508	1.1.02	By bal b/d	9,516			
		19,508	31.12.02	By Depreciation	9,516			
		19,508	31.12.02	By Interest on DFI	476			
		19,508			19,508			
31.12.03	To Lease A/c	30,000	1.1.03	By bal b/d	19,508			
31.12.03	To P&L A/c	492	31.12.03	By Depreciation	9,516			
		492	31.12.03	By Interest on DFI	976			
		492	31.12.03	By Dep. Fund Investment	492			
		30,492			30,492			

## NOTES

Dr			Cr		
Depreciation Fund Investment A/c					
Date	Particulars	Amount Rs.	Date	Particulars	Amount Rs.
31.12.01	To Bank	9,516	31.12.01	By bal c/d	9,516
		9,516			9,516
1.1.02	To bal b/d	9,516	31.12.02	By bal c/d	19,508
31.12.02	To Bank [9,516 + 476]	9,992			
		19,508			19,508
1.1.03	To bal b/d	19,508	31.12.03	By Bank A/c [sale proceeds]	20,000
31.12.03	To Dep. Fund	492			
		20,000			20,000

### 1.1.70 Intangible Assets

Intangible assets are those that have no physical existence, that is, they are those which cannot be seen, touched or felt. Examples of intangibles assets are Goodwill, Patent right, Trademark right, Copy right, etc.

The act of writing off the cost of intangible assets over their legal life is called Amortisation.

### 1.1.71 Intangible Assets and Fictitious Assets - Distinguished

Intangible assets have no physical existence, but are really assets.

Unadjusted losses [example, preliminary expenses, discount on issue of shares or debentures, profit and loss account debit balance] shown on the asset side along with other assets are called **Fictitious assets**. They are really not assets but are temporarily shown on the asset side, till they are charged to Profit and loss account.

### 1.1.72 Summary

Accounting has evolved over a number of years and has catapulted to the status of a profession with different branches such as Financial, Cost, Management and Human Resource Accounting.

Cost Accounting is concerned with accounting for cost of products or services and presenting them for facilitating cost control and cost reduction.

Management accounting is concerned with presenting accounting information exclusively for managerial decision making.

## NOTES

Data generated by Cost and Management accounting are used internally and are not shown to outsiders generally.

Human Resource accounting is concerned with quantification, accounting, and reporting of value of human resources in an organisation.

Inflation accounting is concerned with roping in of price level changes in the traditional accounting function.

Each of the above, including Financial accounting, have their own purposes, objectives, merits and demerit.

Financial Accounting starts with recording of transactions in journal, posting to ledger, balancing of ledger accounts, chalking out a trial balance, and ends with preparation of final accounts, consisting of Trading account [to ascertain Gross profit], Profit and Loss account [ to calculate Net profit], and Balance Sheet [ to ascertain the financial position]. In case of manufacturing organisations, Manufacturing account is prepared in addition to the above.

The theoretical base of accounts consists of accounting principles, called GAAP. This contains accounting concepts and conventions.

Accounting concepts are the assumptions essential to the practice of accounting and preparation of financial statements. There are 10 concepts – Entity, Money measurement, Going concern, Dual aspect, Accounting period, Cost, Revenue recognition, Matching, Accrual and objective evidence concepts.

Accounting conventions are traditions followed worldwide in preparing and presentation of accounts. There are four conventions, namely, Full disclosure, Materiality, Consistency and Conservation.

Financial accounting is based on Double Entry System, which states that for every Debit [benefit receiving aspect] there will be a corresponding equal Credit [benefit giving aspect]. Any financial transaction can be analysed in terms of Personal, Real and Nominal accounts.

Accounting cycle starts with the recording of transactions, in terms of debit and credit, in the journal and ends with the preparation of final accounts.

Inventory consists of raw materials, work-in-progress, and finished goods. Inventory should be properly priced and valued. Inventory system may be periodic or perpetual. Inventory can be priced using FIFO, LIFO, HIFO, specific price method, Standard price method, Simple average and Weighted average method. In financial accounting, inventory is valued at the least of cost or net realizable value.

Fixed assets are those assets which are acquired for permanent use in the business and are not meant for re-sale in the normal course of business. The qualification of the annual usage of fixed assets in business is called Depreciation. There are nine methods for providing depreciation – WDV, SLM, Annuity, Revaluation, Depletion, Machine hour rate, Sum of years digits, Insurance policy and Sinking Fund Methods.

Fixed asset can be tangible or intangible. Tangible fixed assets are those which have physical existence, e.g. Building, furniture, land, etc. Intangible fixed assets are those which have no physical existence, e.g., goodwill, copyright. The writing off intangible assets over their legal life is called Amortisation.

### **1.1.73 Multiple Choice Questions**

1. Financial accounting is concerned with recording transactions from:
  - a) Owners point of view
  - b) Business point of view
  - c) Creditors point of view
2. Application of accounting principles while preparing accounts is
  - a) Compulsory
  - b) Optional
  - c) Implied
3. Double entry system means
  - a) Entry in two sets of book
  - b) Entry in two pages
  - c) Entry for two aspects of a transaction.
4. Accounting equation is based on
  - a) Matching concept
  - b) Dual aspect concept
  - c) Accrual concept
5. Purchase account is debited when
  - a) Goods are purchased
  - b) Assets are purchased
  - c) Goods are brought on sale or return basis.
6. Sales Returns Book records
  - a) Return of goods originally purchased on cash
  - b) Return of assets purchased on credit
  - c) Return of goods originally purchased on credit

**NOTES**

7. Cash Book serves as
  - a) Journal
  - b) Ledger
  - c) Journal and Ledger
8. In Financial Accounting, inventory is valued at the least of
  - a) Cost or market price
  - b) Cost or net realisable value
  - c) Cost price
9. Closing stock appearing in trial balance will be shown in
  - a) Balance sheet
  - b) Trading account
  - c) Both
10. Spreading the cost of intangible assets over its legal life is called
  - a) Depreciation
  - b) Depletion
  - c) Amortization
11. Loss of stock by fire [fully insured] must be
  - a) Debited to Trading A/c
  - b) Credited to Trading A/c
  - c) Debited to P&L A/c
12. Goodwill is
  - a) Fictitious asset
  - b) Fixed asset
  - c) Current asset
13. Provision for discount is calculated on the amount of debtors shown
  - a) After deducting further bad debts but before PBD
  - b) After deducting further bad debts and PBD
  - c) After deducting PBD but before further bad debts
14. Depreciation is charged on
  - a) Current assets
  - b) Fixed assets
  - c) Wasting assets

15. Under Diminishing balance method of providing depreciation, it is charged on
  - a) Written down value
  - b) Original cost
  - c) Realisable value
16. LIFO method of pricing of material issue is more suitable when material prices are
  - a) Rising
  - b) Falling
  - c) Fluctuating
17. Average price methods are more suitable when material prices are
  - a) Rising
  - b) Falling
  - c) Fluctuating
18. If WDV method of depreciation is followed, profits are
  - a) Less during earlier years than later years
  - b) More during earlier years than later years
  - c) Constant for all years
19. Inflation accounting is concerned with
  - a) Inflating the accounts
  - b) Incorporating price level changes
  - c) Incorporating in accounts, the inflation rate published by the Government
20. Assets are usually shown in Balance Sheet at
  - a) Unexpired cost
  - b) Replacement cost
  - c) Revalued cost

**Answers:**

- |      |          |      |          |      |          |      |          |      |          |
|------|----------|------|----------|------|----------|------|----------|------|----------|
| (1)  | <b>b</b> | (2)  | <b>c</b> | (3)  | <b>c</b> | (4)  | <b>b</b> | (5)  | <b>a</b> |
| (6)  | <b>c</b> | (7)  | <b>c</b> | (8)  | <b>b</b> | (9)  | <b>a</b> | (10) | <b>c</b> |
| (11) | <b>b</b> | (12) | <b>b</b> | (13) | <b>b</b> | (14) | <b>b</b> | (15) | <b>a</b> |
| (16) | <b>a</b> | (17) | <b>c</b> | (18) | <b>a</b> | (19) | <b>b</b> | (20) | <b>a</b> |

**1.1.74 Short Questions**

- 1) Define Financial accounting and explain its function?
- 2) What are the objectives of Financial accounting?
- 3) What are the various tools and techniques used by Management Accountant?

# NOTES

- 4) What are the objectives and functions of Cost Accounting?
- 5) Explain Journal, Ledger and Trial Balance?
- 6) What is Depreciation and Depreciation Accounting?
- 7) What are Trading account, Profit and loss account and Balance Sheet?
- 8) Distinguish between Capital and Liabilities?
- 9) Bring out the difference between Depreciation, Depletion and Amortization?
- 10) Write short notes on
  - a) Fixed asset
  - b) Current assets
  - c) Wasting assets
  - d) Intangible assets
  - e) Fictitious assets
- 11) What is Inflation accounting? Briefly explain its merits and demerits?
- 12) What is Inventory? What do you mean by pricing and valuation of inventory?
- 13) Briefly explain the steps involved in inventory valuation?
- 14) Explain the two types of inventory system?
- 15) What are the objectives of providing depreciation?
- 16) Give Journal entries for the following:
  - i) Goods worth Rs.500 given as charity.
  - ii) Received Rs.975 from Harikrishnan in full settlement of his account of Rs.1,000
  - iii) Received a first and final dividend of 60 paise in the rupee from the official receiver of Mr. Rajan who owed us Rs.1,000.
- 17) At the end of an accounting year, a trader finds that no entry has been passed in the books of accounts in respect of the following transactions:
  - i) Outstanding salary at the end of the year      Rs.200
  - ii) Goods given as charity during the year      Rs.300
  - iii) Stock-in-hand at the end of the year      Rs.20,000

Journalise these transactions.
- 18) From the following, calculate the amount of provision for doubtful debts to be debited to P&L A/c:
 

Opening provision for doubtful debts	Rs. 2,400
Closing sundry debtors	Rs. 42,000
Bad debts yet to be written off	Rs. 2,000

Provide for doubtful debts at 10% on debtors.

**[Ans : Amount to be debited to P&LA/c Rs.3, 600]**

**NOTES**

19) A manager gets 5% commission on net profit after charging such commission. What shall be his commission if gross profit is Rs.96,000 and expenses of indirect nature other than manager's commission are Rs.12,000?

**[Ans : Manager's Commission Rs. 4, 000 i.e., 84,000 \* 5/105]**

20) Correct the following Trial Balance by identifying the errors:

<b>Debit balances</b>	<b>Amount Rs.</b>	<b>Credit balance</b>	<b>Amount Rs.</b>
Opening stock	10,000	Loan A/c (Cr.)	15,000
Purchases	49,000	Sundry debtors	42,000
Wages	15,000	Capital	50,000
Rent, Rates	1,000	Provision for Bad debts	2,800
Salaries	8,000	Sales Returns	2,000
General expenses	900	Discount allowed	500
Plant	15,000		
Sundry Creditors	20,000		
Furniture	8,000		
Cash at Bank	5,000		
Sales	1,28,600		
Building	60,000		
	<b>3,20,500</b>		<b>1,12,300</b>

**[Ans: Total of Trial Balance Rs. 2,16,400]**

21) A machine was leased for Rs.35,000. The cost of erection was Rs.5,000. The machine is to be replaced at the end of 4 years. For this purpose an insurance policy is taken out, the annual premium being Rs.9,200. At the end of 4 years, a new machine was leased for Rs.45,000.

Show the ledger accounts as they would appear for 4 years.

**[Ans: Balance of depreciation Reserve A/c  
transferred to depreciation insurance  
policy A/c : Rs. 3, 200]**

**NOTES**

22) The balance in the Machinery a/c stood at Rs.40,500 on 1/4/99 after providing depreciation using written down value method at 10% for two years. On that date it was decided to change the method to original cost from the date of purchases at 10% per annum. Prepare Machinery a/c from 1997-98 to 1999-2000.

**[Ans: Original Cost of Machinery Rs. 50, 000;**

**Balance of Machinery on 31/3/2000 under S.L.M. Rs. 35, 000]**

23) In 1988, a company acquired a mine at a cost of Rs.10,00,000. The estimated reserve of minerals is 1,00,00,000 tonnes of which 80% is expected to be raised. The first three years in tones are 3,00,000, 4,00,000 and 5,00,000 respectively. Show the Mine A/c charging depreciation under Depletion Method.

**[Ans: Rate of Depreciation: Re. 0. 125 per ton;**

**Depreciation 1988 – Rs.37, 500;**

**1989 – Rs.50, 000; 1990 – Rs.62, 500]**

24) A company purchased a second-hand machinery on 1<sup>st</sup> January, 1991 for Rs.37,000 and immediately spent Rs.2,000 on its repairs and Rs.1,000 on its erection. On 1<sup>st</sup> July 1992, it purchased another machine for Rs.10,000 and on 1<sup>st</sup> July, 1993, it sold off the first machine purchased in 1991 at Rs.28,000. On the same date it purchased machinery for Rs.25,000. On 1<sup>st</sup> July, 1994 the second machinery purchased for Rs.10,000 was sold off for Rs.2,000.

Depreciation was provided on Machinery at the rate of 10% on the original cost annually.

Give the Machinery Assent for four years commencing from 1<sup>st</sup> January, 1991.

**[Ans: Cl. Balance of Machinery A/c at the end of 1991 : Rs.36, 000;**

**1992 : Rs.41, 500; 1993 : Rs.32, 250; 1994 : Rs.21, 250;**

**Loss on sale on 1/7/93 : Rs.2, 000; On 1/7/94 : Rs.6, 000]**

25) A firm had purchased loose tools costing Rs.4,000 on 1<sup>st</sup> April 1990. The tools were independently valued at the end of every year and the values placed on them were as under:

	Rs.
31.12.1990	3,800
31.12.1991	3,000
31.12.1992	2,400
31.12.1993	1,600

**NOTES**

Find the amount of depreciation and show the loose tools a/c from 1990 to 1993.

**[Ans : Depreciation: 1990 Rs. 200; 1991 Rs. 800;  
1992 Rs. 600; 1993 Rs. 800]**

26) A machine was purchased on 1<sup>st</sup> Jan, 1990 at a cost of Rs.50,000 and Rs.2,000 were spent for its installation. It is expected that its total working life would be 50,000 hours and its scrap value would be Rs.2,000 at the end of its life time.

Show the Machinery A/c from 1990 to 1993 assuming that the machine was used as under:

	Hours
During 1990	- 2,000
During 1991	- 4,000
During 1992	- 4,400
During 1993	- 4,800

**[Ans : Machine hour rate: Re. 1; Depreciation: 1990 Rs. 2, 000;  
1991 Rs. 4, 000; 1992 Rs. 4, 400; 1993 Rs. 4, 800]**

**1.1.75 Long Questions**

- 1) What are the limitations of Financial Accounting?
- 2) Distinguish between Financial and Cost Accounting?
- 3) Bring out the differences between Cost and Management Accounting?
- 4) Explain the various methods of valuation of human resources?
- 5) Explain the objectives and functions of Management Accounting?
- 6) Bring out the advantages and limitations of Cost and Management accounting?
- 7) Explain Accounting cycle with an example?
- 8) Explain the various methods of providing depreciation?
- 9) Explain the various method of accounting for price level changes?
- 10) What are the accounting principles and explain the various accounting concepts and conventions?
- 11) List a few adjustments you come across in final accounts and explain how you will deal with them?
- 12) What is Human Resource Accounting? Explain its objectives, advantages and limitations?
- 13) Briefly explain the various methods of pricing material issues?
- 14) "Accounts ignore inflation and inflation makes a mockery of them". Explain?

**NOTES**

15) Briefly explain (a) Golden rule (b) Types of accounts (c) Manufacturing account (d) Double Entry System (e) Revenue recognition (f) Matching revenues and expenses?

16) From the following balances as on 31/12/2000. Prepare the Trading and Profit & Loss A/c and a Balance Sheet.

Dr

Cr

Particulars	Amount Rs.	Particulars	Amount Rs.
Capital	15,950	Manufacturing wages	11,500
Creditors:		Power	4,500
Trade	15,000		
Expense	3,400		
Rent received	300	Rent & Insurance	9,950
Purchase Returns	2,000	Salaries and general wages	17,200
Sales	1,44,800	Discount received	900
Reserve for doubtful debts (1/1/2000)	300	General Expenses	4,300
Advertisement	4,000	Sales Returns	300
Development			
Goodwill	2,500	Salesmen commission	1,445
Plant & Machinery	10,000	Discount allowed	2,500
Samples	1,350		
Stock on hand (1/1/2000)	16,000		
Debtors	7,300		
Cash at Bank	1,000		
Cash in hand	55		
Drawings	2,500		
Purchases	85,500		
Carriage Inwards	750		

Adjustments:

- I. The closing stock was Rs.11,500: but there had been a loss by fire on December 20 not covered by insurance amounting to Rs.10,000.
- II. Depreciation of 10% on plant & machinery and  $33\frac{1}{3}\%$  on samples has to be written off.

- III. Reserve for doubtful debts is to be increased to Rs.1,000  
 IV. Write off 50% of advertisement development account.  
 V. Annual insurance premium expiring on 31/3/01 was Rs.600.

[Ans: Gross Profit – Rs. 49, 750; Net Profit – Rs. 1,555;

Balance Sheet total – Rs. 33, 405]

- 17) The following Trial Balance was extracted from the books of Shri. Chandran as on 31<sup>st</sup> December 2006.

Dr		Cr	
Particulars	Amount Rs.	Particulars	Amount Rs.
Cash in hand	1,120	Capital	80,000
Cash at Bank	4,200	Sundry Creditors	44,560
Interest and Bank Charges	400	Bank Loan	15,000
Bad debts	1,400	Purchase Returns	1,740
Purchases	3,100	Sales	2,50,850
Motor Car	12,000	Reserve for bad debts	2,000
Stock (31/12/2005)	34,200		
Factory lighting	950		
Sundry debtors	78,200		
Factory fuel and power	1,280		
General Expenses	8,200		
Goodwill	25,000		
Insurance & tax	4,250		
Manufacturing expenses	9,500		
Buildings	24,000		
Freight on sales	2,140		
Freight on purchases	1,860		
Furniture	10,000		
Plant & Machinery	20,000		
Manufacturing wages	34,500		
Salaries	15,850		
	3,94,150		3,94,150

## NOTES

**NOTES**

Prepare the Trading and Profit & Loss A/c for the year ended 31<sup>st</sup> December 2006 and the Balance Sheet as on that date taking into account the following information:

- I. Stock on hand on 31/12/2006 was valued at Rs.30,500
- II. Bring reserve for bad debts to 5% on Sundry Debtors.
- III. Depreciate Plant & Machinery by 10%, Furniture by 5% and Motor car by Rs.1,000.
- IV. A commission of 1% on the gross profit is to be provided for staff manager.
- V. A commission of 2% on net profit (after charging the staff manager's commission) is to be credited to the General Manager.

**[Ans: Gross Profit – Rs. 95, 700; Net Profit – Rs. 55,951;**

**Balance Sheet total – Rs. 1,97,610;**

**Commission to staff manager – Rs. 957**

**and to General Manager Rs. 1, 142]**

18) The following details are extracted from Mr. Babu for the year ending 31<sup>st</sup> March 2006.

	<b>Debit Rs.</b>	<b>Credit Rs.</b>
Opening stock	25,000	
Cash in hand	10,000	
Cash at bank	17,000	
Debtors	35,000	
Purchases	75,000	
Sales Returns	3,000	
Carriage inwards	500	
Carriage outwards	700	
Wages	2,000	
Fuel & Power	1,500	
Octroi duty	300	
Land & Building	1,00,000	
Salaries	25,000	
Drawings	7,000	
Bad debts	1,000	
Machinery	50,000	
Office expenses	2,500	
Rent	1,200	
Insurance	2,400	
Furniture	10,000	

**NOTES**

Discount	250	
Packing expenses	400	
Bills Receivable	4,000	
Capital		1,40,000
Bills payable		4,750
Sundry Creditors		7,500
Bank Loan @ 15%		10,000
Sales – Cash		45,000
Sales – Credit		1,60,000
Purchases Returns		5,000
Dividend Received		300
Provision for bad debts		1,200
Total	3,73,750	3,73,750

**Adjustments:**

- I. Wages outstanding Rs.1,000. Salaries for Mr. Babu Rs.12,000 to be paid. Insurance for 3 months is to be carried forward.
- II. Goods worth Rs.500 were issued as free samples and Goods worth Rs.1,000 were taken by the proprietor for personal use.
- III. Interest on Capital and Drawings are to be charged at 10% and 12% respectively.
- IV. The manager is entitled to a commission of 10% of the Net profit before charging such commission.
- V. Increase the bad debts by Rs.500 and maintain provision for bad debts at 5% and a Discount of 3% on Creditors is also expected.
- VI. Amount due to Mr. X Rs.2,500 is included in the creditors and Rs.1,500 due from Mr. X is also entered in the debtors.
- VII. Machinery worth Rs.5,000 was sold for Rs.4,200 and credited to Machinery A/c.
- VIII. Closing stock was valued at Rs.20,000 on 31.3.2006.

**[Ans: Gross Profit Rs. 1, 23,200; Net Profit Rs. 55, 728;**

**Balance Sheet total Rs. 2, 42, 150]**

**NOTES**

19) Babu's Trial Balance as on 30<sup>th</sup> June, 2006 was as under:

Debit Balance		Credit Balance	
	Rs.		Rs.
Land & Building	20,000	Capital	80,000
Machinery	50,000	Sundry Creditors	8,000
Furniture & Fittings	4,000	Discount received	400
Opening Stock	16,300	Outstanding Expenses	1,550
Purchases	80,000	Sales	1,50,500
Salaries	6,000	Repairs & Renewals	6,000
		Provision	
Carriage on sales	1,500		
Freight on purchases	2,000		
Customers duty on purchases	8,000		
Advertising	5,400		
Wages	15,000		
Rent	3,000		
Postage & Stationery	1,500		
General Expenses	3,200		
Repairs to machinery	2,000		
Loans to Kumar @ 9% (given on 1 <sup>st</sup> Jan. 06)	5,000		
Prepaid Insurance	200		
Sundry Debtors	20,000		
Cash in hand	250		
Cash at Bank	3,100		
	2,46,450		2,46,450

The following further information is given:

- Stock on 30<sup>th</sup> June, 2006 was Rs.14,900
- Machinery was purchased on 1<sup>st</sup> Jan 2006 for Rs.10,000 and was installed by own workers. The wages for this purpose amounted to Rs.500. This amount is included in Wages Account.
- Depreciation is to be written off @ 3% on Land and Building; 10% on Machinery and 5% on Furniture and Fixtures.
- Provision for repairs and renewals is credited with Rs.1,500 every year.
- A reserve of 2% is to be made on creditors for discount.

**NOTES**

From the information given above, prepare Trading account and profit and loss a/c for the year ended June 30, 2006 and Balance sheet as at the date.

**[Ans: Gross Profit Rs.44, 600; Net Profit Rs.17, 960;**

**Balance Sheet total Rs.1, 12, 850]**

20) Prepare the final accounts of Mr. Verma from the following Trial Balance prepared on December 31<sup>st</sup> 2005.

Land & Building	40,000	Interest on Bank Loan	3,000
Purchases	3,26,700	Salaries (including Adv. Rs.1,500)	22,000
Returns inwards	2,500	Establishment exp.	1,595
Travelling expenses	6,900	Carriage inwards	3,000
Printing & Stationery	1,600	Advertisement	16,000
Cash at Bank	30,795	Credit balances	
Discount allowed	1,800	Sales	4,68,100
Misc.Expenses	18,620	Income from Investments	990
Sundry Debtors	64,000	12% Bank Loan secured on fixed assets (No movement during the year)	40,000
Postage	800	Mr.Verma's capital a/c	80,000
Furniture	8,000	Sundry Creditors	63,100
Cash in hand	5,900	Bills payable	2,600
Motor car	16,000	Returns outwards	3,700
Investment ( Market value Rs.14,000)	12,000	Discount received	1,200
Drawings	10,000		
Bills receivable	4,800		
Stock ( 1.1.2006)	63,680		

The following further information was obtained:

- I. Stock as on December 31, 2005 was Rs.1,20,000
- II. Sundry Debtors include a sum of Rs.3,000 due from Mr. B and sundry creditors include a sum of Rs.4,000 due to Mr. B.

**NOTES**

- III. The reserve for doubtful debt is to be maintained @ 10% on sundry debtors and reserve for discount on debtors and on creditors are to be created @ 5%
- IV. Bills receivable include dishonoured bill for Rs.600
- V. Stock worth Rs.10,000 destroyed by fire in 25.11.2003 in respect of which the insurance company admits claim for only Rs.7,500
- VI. The manager of Mr. Verma is entitled to a commission of 10% of net profit calculated after charging such commission.
- VII. 3/4<sup>th</sup> of the Advertisement expenses are to be carried forward.
- VIII. 2.5% of the net profit is to be charge to reserve fund.
- IX. Depreciation to be charged on (i) Land & Building @ 2.5% (ii) Furniture @ 10% and (iii) Motor Car @ 20%.

**[Ans: Gross Profit Rs. 2, 05, 920; Net Profit Rs. 1, 18, 379;**

**Balance Sheet total Rs. 3, 05, 050]**

- 21) From the following particulars extracted from the books of Mr. Victor you are required to prepare a Trading and Profit and Loss a/c for the year ended December, 31<sup>st</sup> 2005 and a Balance Sheet as on that date, after making the necessary adjustments:

	Rs.		Rs.
Victor capital a/c	2,08,000	Bills payable	5,000
Victor drawing a/c	12,000	Stock ( 1 <sup>st</sup> Jan. 2006)	35,000
Purchases	90,000	Wages	32,000
Return Inwards	2,000	Sundry Creditors	40,000
Land & Buildings	60,000	Postage and Telegrams	1,400
Plant & Machinery	1,00,000	Insurance charges	1,600
Sales	2,10,000	Gas and Fuel	2,700
Return outwards	1,000	Bad debts	600
Salaries	12,000	Office rent	2,600
Office expenses	2,500	Freight and Duty	9,000
Office Furniture and Fixtures	5,000	Loose tools	2,000
Discount Account(Dr.)	1,200	Factory lighting	1,600
Sundry Debtors	26,600	Provision for Doubtful Debts	800
Investments	40,000	Interest on Investments	4,000
Cash at Bank	26,600	Cash on hand	2,400

**NOTES****Adjustments:**

- I. Stock on December 31, 2005 was valued at Rs.66,000.
- II. Wages Rs.1,600 and salaries Rs.600 were outstanding.
- III. Insurance prepaid was Rs.400.
- IV. A new machine was installed on September 30, 2005, costing Rs.14,000 but it was not recorded in the books and no payment was made for it. Wages of Rs.1,000 paid for its erection have been debited to wages account.
- V. Loose tools were valued at Rs.1,600 on Dec.31, 2005.
- VI. Depreciate Plant & Machinery by 10% p.a; Furniture & Fixture by 5% p.a. and Land & Buildings by 2% p.a.
- VII. Of the Sundry Debtors Rs.600 are bad and should be written off.
- VIII. Maintain a provision of 5% on Sundry Debtors for doubtful debts.
- IX. Stock valued at Rs.1,500 was destroyed by fire on 25.12.2005 but the Insurance co., admitted a claim for Rs.1,000 only.

**[Ans: Gross Profit Rs.1, 05, 600; Net Profit Rs.73, 675;**

**Balance Sheet total Rs.3, 30, 875]**

22) On 31<sup>st</sup> December, 2005 the Trial Balance of Mr. Arul was as follows:

Debit Balances	Rs.	Credit Balances	Rs.
Stock on 1 <sup>st</sup> Jan, 2005:		Sundry Creditors	15,000
Raw Materials	21,000	Bills payable	7,500
Work - in - Progress	9,500	Scale of scrap	2,500
Finished goods	15,500	Commission	450
Sundry Debtors	24,000	Provision for Doubtful Debts	1,650
Carriage on Purchases	1,500	Capital A/c	1,00,000
Bills Receivable	15,000	Sales	1,67,200
Wages	13,000		
Salaries	10,000		
Telephone, postage etc.,	1,000		
Repairs to plant	1,100		
Repairs to office furniture	350		
Purchases	85,000		
Cash at Bank	17,000		
Plant & Machinery	70,000		
Office Furniture	10,000		
Rent	6,000		
Lighting	1,350		
General Expenses	1,500		
	3,02,800		3,02,800

**NOTES**

The following additional information is available:

- a) Stocks on 31<sup>st</sup> December, 2005 were:
- |                     |        |
|---------------------|--------|
| Raw materials       | 16,200 |
| Finished goods      | 18,100 |
| Semi-finished goods | 7,800  |
- b) Salaries and wages unpaid for December 2005 were respectively, Rs.900 and Rs.2,000.
- c) Machinery is to be depreciated by 10% and office furniture by 7.5%.
- d) Provision for Doubtful Debts is to be maintained @ 1% Sales.
- e) Office premises occupy  $\frac{1}{4}$  of total area. Lighting is to be charged as to  $\frac{2}{3}$  to factory and  $\frac{1}{3}$  to office.

Prepare the Manufacturing a/c, Trading a/c and Profit and Loss a/c and the Balance Sheet relating to 2005.

**[Ans: Cost of Goods Manufactured Rs.1, 19, 000;**

**Gross Profit Rs. 50, 800; Net Profit Rs. 34, 778;**

**Balance Sheet total Rs. 1, 68, 678]**

23) On 31<sup>st</sup> December 1993, the Trial Balance of Janakiraman & Co., was as follows:

Debit balances	Rs.	Credit balances	Rs.
Opening stock	40,000	Capital (Fixed)	1,00,000
Debtors	30,000	Creditors	15,000
Bills Receivable	15,000	Bills Payable	7,500
Carriage Inward	1,500	Miscellaneous Receipts	450
Wages	13,000	Commission	2,500
Salaries	10,000	Bad debts provision	550
Telephone	1,000	Sales	1,67,200
Repairs	350		
Purchases	85,000		
Cash at Bank	17,000		
Plant & Machinery	65,800		
Furniture	9,000		
Miscellaneous Expenses	350		
Depreciation	5,200		
	2,93,200		2,93,200

**NOTES**

The following additional information is to be taken into consideration:

- I. Closing stock amounted to Rs.50,000.
- II. Bad debts provision equal to be equal to  $1\frac{1}{4}\%$  of debtors.
- III. Interest on capital to be provided for at 2.5% p.a.
- IV. Provide outstanding liabilities – Salaries – Rs.2,000; Wages – Rs.1,750; Rent – Rs.7,500
- V. It was discovered that stock sheets as on 31.12.1992 were over cast to the extent of Rs.1,000.

Prepare Trading & Profit & Loss a/c of the firm for the year ended 31<sup>st</sup> December 1993 and a balance sheet as at that date.

**[Ans: Gross Profit Rs. 76, 950; Net Profit Rs. 49, 675;  
Balance Sheet total Rs. 1, 86, 425]**

24) From the following particulars taken out from the books of Shri. Ram. Prepare Trading and Profit & Loss a/c for the year ended on and Balance Sheet as at 31<sup>st</sup> Dec. 1994.

	Rs.		Rs.
Sundry Debtors a/c	52,000	Cash at Bank	6,200
Creditors	22,000	Machinery	24,000
Cash in hand	2,392	Wages	23,600
Furniture	3,500	General Expenses	2,680
Motor car	22,000	Carriage Inwards	2,040
Purchases	1,45,000	Carriage Outwards	1,630
Sales	2,92,000	Fuel & Power	6,430
Sales Returns	2,600	Shri Ram's Capital	30,000
Salaries	8,420	Drawings	8,000
Opening Stock	11,400		
Motor car Expenses	6,108		
Rent, rates and taxes	3,600		
Insurance premium paid	2,400		
on 1 <sup>st</sup> Oct, 1994			

The following information is relevant:

- I. Closing stock Rs.35,000
- II. Goods worth Rs.2,000 were distributed as free samples.
- III. Rs.1,000 paid for machinery erection was debited to wages account
- IV. Write off further bad debts Rs.2,000 and create a reserve for Doubtful debts at 5% of Sundry Debtors.

**NOTES**

- V. Depreciate Furniture and Machinery by 10% and Motor car by 20% .
- VI. Commission of Rs.3,600 has been earned but not received till the close of the accounting year.
- VII. An amount of Rs.10,000 was borrowed from Mr. Paramu on 1<sup>st</sup> July, 1994 and it was returned on 31<sup>st</sup> December 1994. However, interest at 10% p.a. still remains unpaid.

**[Ans: Gross Profit Rs. 1, 38, 930; Net Profit Rs. 1, 05,242;**

**Balance Sheet total Rs.1, 39, 742]**

- 25) From the following Trial Balance of Mr. Xavier as on 31/3/2003, prepare Trading A/c, Profit & Loss A/c for the year ended 31/3/2003 and a Balance Sheet as on that date after making necessary adjustments:

**Trial Balance**

Debit	Rs.	Credit	Rs.
Xavier's Drawings	12,000	Xavier's Capital	60,000
Furniture & Fittings	4,000	Returns Outward	2,000
Plant & Machinery	30,000	Sales	1,30,000
Opening Stock	20,000	Creditors	12,000
Purchases	80,000	Loan at 6% p.a. taken from P. Abdul on 1/1/03	10,000
Salaries & Wages	22,400	Discount	600
Debtors	20,400		
Returns Inward	5,000		
Postage & Telegram	1,500		
Rent, Rates & Taxes	3,600		
Bad debts written off	400		
Trade Expenses	200		
Interest on Loan from P. Abdul	150		
Insurance	800		
Travelling Expenses	500		
Sundry Expenses	300		
Cash in hand	3,050		
Cash at Bank	10,300		
	2,14,600		2,14,600

**Adjustments:**

- I. Closing Stock: Cost Price – Rs.21,000  
Market Price – Rs.25,000
- II. Of the debtors, Rs.400 are bad and should be written off. Create a reserve for discount on debtors 2.5%
- III. Salaries Rs.800 for March 1993 were not paid.
- IV. Interest on capital is to be calculated at 6% p.a. and on drawings Rs.330.
- V. Prepaid Insurance amounted to Rs.100.
- VI. Depreciate furniture & fixtures by 5% and Plant & Machinery by 10%
- VII. Make a reserve for discount on creditors @ 2%.

**[Ans: Gross Profit Rs. 48, 000; Net Profit Rs. 10, 920;**

**Balance Sheet total Rs. 84, 750]**

## 26) Raw materials :

Opening stock	:	500 units at Rs.10/- each
Purchases	:	1000 units at Rs.15
Closing stock	:	500 units
Wages	:	Rs.2, 000
Sales	:	Rs.20, 000

Calculate profit, if raw material issued are priced on (a)FIFO basis (b)LIFO basis.

**[Ans: (a) Rs.5, 500 (b) Rs.3, 000]**

## 27) Enter the following transactions in the stores ledger of Y material using (i) FIFO and (ii) LIFO methods:

May 2008:

- 1 Balance 250 units at Re. 1 per unit
- 3 Issued 50 units on material requisition No. 61
- 6 Received 800 units, vide goods received [Note No. 13] at Rs. 1. 10 per unit
- 7 Issued 300 units on Material requisition No. 63
- 8 Returned to stores 20 units issued on material requisition No. 61
- 12 Received 300 units as per goods received note No. 15 at Rs. 1. 20 per unit
- 15 Issued 320 units [Material requisition No. 83]
- 18 Received 100 units, vide goods received note No. 77 at Rs. 1. 20 per unit
- 20 Issued 80 units [Material requisition No. 102]

**NOTES**

- 23 Returned to vendors 20 units from goods received Note No.77 received on 18<sup>th</sup>.  
 27 Received 200 units on goods received not No. 96 at Re. 1 per unit.  
 28 Freight paid on purchase [vide goods received note No. 96] Rs. 50.  
 30 Issued 250 units on material requisition no. 113.

**[ Ans: Closing stock : (i) FIFO – 650 units valued at Rs.781**

**( 50 \* 1.10 + 20 \* 1 + 300 \* 1.20 + 80 \* 1.20 + 200 \* 1 + 50)**

**(ii) LIFO – 650 units valued at Rs.695 (200 \* 1 + 450 \* 1.10)]**

Note:

1. Returned to store is treated like a fresh receipt and issued is as per the method used.
2. Return to supplier is like an issue, but at the original purchase price.
3. Freight paid should be added to the cost of the specific purchase.

28) Prepare a stores ledger account for material 'X' for March 2001, pricing the material on the basis of LIFO with specific pricing.

Date	Receipt Quantity	Rate Rs.	Issue Quantity
1/3/01	200	20	-
4/3/01	-	-	100
5/3/01	30 for issue for a job on 12 <sup>th</sup>	21	
13/3/01	300	18	-
20/3/01	-	-	250
30/3/01	100	16	-
31/3/01	-	-	100

**[Ans: Closing stock: 150 units valued at Rs. 2, 900**

**(100 \* 20 + 50 \* 18)]**

29) From the following particulars write up the stores ledger card:

January 2008

1	Purchase	500 tons at Rs. 2 per unit
10	Purchased	300 tons at Rs. 2. 10 per unit
13	Issued	500 tons
20	Purchased	400 tons at Rs. 2. 20 per unit

**NOTES**

25	Issued	300 tons
27	Purchased	500 tons at Rs. 2. 10 per unit
31	Issued	200 tons

Adopt base stock method with LIFO. Base stock is 200 tons out of the Jan 1 purchase.

**[Ans : Closing stock : Base stock 200 tons at Rs. 2 each = Rs. 400;**

**Other stock 500 tons valued t Rs. 1,050;**

**(100 \* 2 + 100 \* 2.2 + 300 \* 2.10)]**

30) The following receipts and issues were made of materials during the month of May 2008. Prepare the stores ledger account on the basis of (a) Simple average and (b) Weighted Average.

## Receipts

1.5.08	Opening balance of stock 300 units at Rs. 4.50 per unit
7.5.08	Purchases 400 units at Rs. 5.00 per unit
15.5.08	Purchases 1,000 units at Rs.5.50 per unit
23.5.08	Purchases 700 units at Rs. 4. 80 per unit

## Issues

3.5.08	Issue 300 units
8.5.08	Issue 100 units
17.5.08	Issue 700 units
26.5.08	Issue 700 units

**[Ans : Closing stock : (a) 600 units valued at Rs. 3, 000;**

**(b) 600 units at Rs. 5. 07 per unit = Rs. 3. 042]**

31) From the records of an oil distributing company, the following summarized information is available for the month of March 2008:

Sales for the month : Rs. 19,25,000

Opening stock on 1/3/08 : 1,25,000 litres of Rs. 6. 50 per litre.

Purchases [ including freight and insurance]L

March 5        1,50,000 litres at Rs. 7. 10 per litre.

March 27       1,00,000 litres at Rs. 7. 00 per litre.

Closing stock on 3/3/08 : 1,30,000 liters.

Administrative expenses for March 2008 : Rs.45,000.

**NOTES**

On the basis of the above information, work out the following using FIFO and LIFO methods of inventory valuation assuming that pricing of issue is being done at the end of the month after all receipts during the month:

- a) Value of closing stock on 31/3/08
- b) Cost of goods sold during March 2008
- c) Profit or loss for March 2008

[Ans :	FIFO	LIFO
	Rs.	Rs.
Closing stock	9,13,000	8,48,000
Cost of goods sold	16,64,500	17,29,500
Profit	2,15,500	1,50,500]

**1.1.76 Text Books for the Chapter**

- 1) T.S. Reddy, A.Murthy, "Financial Accounting", Margham Publications, 2008.
- 2) Jawahar Lal, "Cost Accounting", Tata Mc. Graw-Hill Publishing Company Limited, 2006.
- 3) M.A. Arulanandam, K.S. Raman, "Advanced Accountancy", Himalaya Publishing House, 2004.
- 4) S.N. Maheswari, S.K. Maheswari, "Accounting for Management", Vikas Publishing House Pvt. Ltd, 2006.
- 5) M.A. Sahaf, "Management Accounting – Principles and Practice", Vikas Publishing House Pvt. Ltd, 2006.

**1.1.77 References for the Chapter**

- 1) T.S. Reddy, Y. Hari Prasad Reddy, "Cost Accounting", Margham Publications, 2009.
- 2) S. Peer Mohamed, P. Akbar Batcha, S.A.N. Shazuli Ibrahim, "Financial Accounting – I", Pass Publications, 2006.
- 3) Bhabatosh Banerjee, "Cost Accounting – Theory and Practice", Prentice Hall of India Pvt. Ltd., 2006.
- 4) R.S.N. Pillai & Bagavathi, "Management Accounting", S. Chand & Co. Ltd., New Delhi, 2004.
- 5) O.S.Gupta, Pankaj Kothari, "Accounting for Managers", Frank Bros. Pvt. Ltd., New Delhi, 2004.

## 1.2 ANALYSIS OF FINANCIAL STATEMENTS

### 1.2.1 Introduction

Financial statement consists of Trading and Profit & loss account and Balance sheet. Financial ratio analysis is concerned with analyzing the financial statements. Cash flow and Funds flow statements gives an analytical view of inflows and outflows of cash and funds during a specific period.

### 1.2.2 Learning Objectives

After going through this unit, the reader is expected to

1. Understand the meaning of ratio analysis and nuances involved in using ratios for analyzing financial statements.
2. Understand the meaning of cash flow statements and methodology involved in preparing the same.
3. Understand the meaning of fund flow statement and techniques used for preparing them.

Financial statements refer to two statements, namely, (i) Trading and Profit and Loss account, and (ii) Balance Sheet. In the case of limited companies, it also included Profit and Loss Appropriation account. These statements contain a wealth of information, which, if analysed and interpreted, can throw light on the profitability and financial soundness of a firm.

### 1.2.3 Analysis of Financial Statements – Meaning

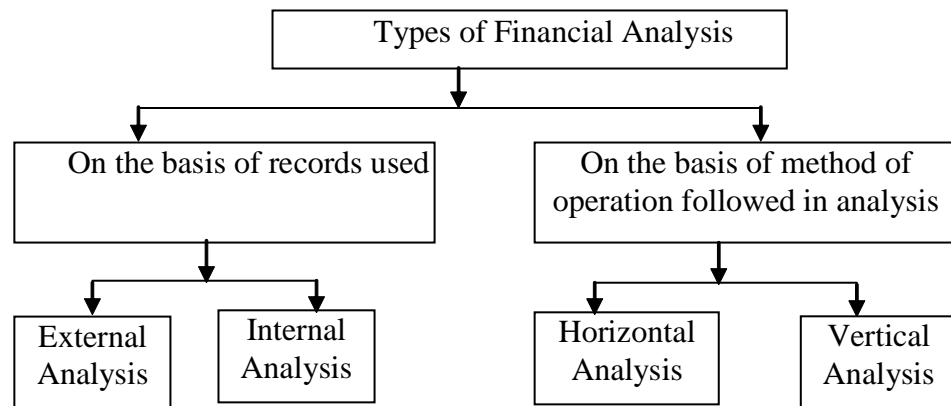
The term “Financial analysis”, also known as analysis and interpretation of financial statements is a process of evaluating the relationship between component parts of a financial statement to obtain a better understanding of a firm’s position and performance.

According to Myers, “Financial statement analysis is largely a study of relationships among the various financial factors in business as disclosed by a single set of statements and a study of the trend of these factors as shown in a series of statements.

# NOTES

## 1.2.4 Types of Financial Analysis

These can be of the following types:



**External Analysis:** This type of analysis is done by outsiders who do not have access to internal accounting records of the company.

**Internal Analysis:** Analysis done by persons who have access to internal accounting records of the firm is called internal analysis.

**Horizontal Analysis:** Here, every item in the financial statement is analysed over a number of years, order to ascertain its trend. Comparative statements and Trend percentages are the two tools used in this type of analysis.

**Vertical Analysis:** It refers to the study of relationship between various items in a specific years financial statement. Common size financial statements and financial ratios are the two tools used in this analytical mode.

## 1.2.5 Objectives of Financial Statement Analysis

- 1) To ascertain the profitability and efficiency of the business operations.
- 2) To estimate the earning capacity of the firm.
- 3) To judge the short-term and long-term solvency of the company.
- 4) To ascertain the debt capacity of the organisation.
- 5) To decide on the future prospects of the concern.
- 6) To find out the efficiency in the utilization of assets.
- 7) To facilitate inter-firm comparison.
- 8) To aid intra-firm comparison.
- 9) To facilitate leverage analysis.
- 10) To held prospective investors in their investment decision.

### 1.2.6 Procedure for Analysis and Interpretation

#### 1) Setting the objective for financial statement analysis

The purpose and extent of analysis should be ascertained at the outset.

#### 2) Collection of data

Sufficient number of years of financial statements should be collected. Additional information or data, if required should also be garnered.

#### 3) Analysis of collected data

The available data should be properly rearranged or regrouped and prepare comparative statements, common-size statements, trends, calculate ratios, etc.

#### 4) Interpretation

The facts revealed by the analysis should be properly interpreted, taking into account relevant quantitative and qualitative factors.

#### 5) Presentation in suitable form

The interpretation drawn from the analysis should be presented in a form which serves the purpose for which the financial statements are analysed.

### 1.2.7 Limitations of Financial Statement Analysis

- 1) Financial statements do not take into account qualitative factors like credit worthiness, quality of human resources, reputation, etc.
- 2) They ignore changes in price level.
- 3) The assumption that past happenings may get reflected in the future may not hold good.
- 4) Interpretation is based on personal judgement of the analyst, which may be biased.
- 5) Window dressing, if any, in the basic financial statements will have an impact on the analysis.

### 1.2.8 Tools and Techniques for Analysis of Financial Statements

The most important tools are

- 1) Common size statements
- 2) Comparative statements
- 3) Trend analysis
- 4) Ratio analysis
- 5) Fund Flow analysis
- 6) Cash Flow analysis

# NOTES

## 1.2.9 Common Size Financial Statements

These are those in which figures reported are expressed as percentages to some common basis. In the case of income statement, all items are expressed as a percentage of sales. On similar lines, all items in the Balance Sheet are expressed as a percentage of totals of assets on liabilities.

## 1.2.10 Comparative Financial Statements

Here, figures for two or more periods are placed side by side to facilitate comparison. A third column is opened to show the amount of increase or decrease. A fourth column is used to give the percentage of increase or decrease. These statements indicate the direction of change and can be used for studying the trends.

## 1.2.11 Trend Analysis

Under this technique, data regarding a particular item is taken for a number of years. The first year is taken as the base year. The value in the base year is defined as 100 for easy interpretation. Values of the subsequent years are expressed as percentages of the base year value. For instance, if sale in the first, second and third years are Rs.50,000, Rs.1,00,000 and Rs.1,25,000 respectively, then the trend percentages will be 100, 200 and 250 respectively.

### Illustration 1: Common Size Income Statement

*The following are the income statements of Alpha Ltd., for the year 2007 and 2008. Prepare common size income statement for the two years.*

#### *Trading and Profit and Loss Account*

<i>Particulars</i>	<i>2007 Rs.</i>	<i>2008 Rs.</i>	<i>Particulars</i>	<i>2007 Rs.</i>	<i>2008 Rs.</i>
<i>To cost of sales</i>	<i>1,20,000</i>	<i>1,75,000</i>	<i>By Sales</i>	<i>2,00,000</i>	<i>2,50,000</i>
<i>To Gross profit c/d</i>	<i>80,000</i>	<i>75,000</i>			
	<i>2,00,000</i>	<i>2,50,000</i>		<i>2,00,000</i>	<i>2,50,000</i>
<i>To Operating Expenses:</i>			<i>By Gross profit b/d</i>	<i>80,000</i>	<i>75,000</i>

<i>Administration</i>	<i>12,500</i>	<i>15,000</i>	<i>By Interest on Investments</i>	<i>10,000</i>	<i>25,000</i>
<i>Selling</i>	<i>7,500</i>	<i>10,000</i>			
<i>Distribution</i>	<i>5,000</i>	<i>5,000</i>			
<i>To Non- Operating Expenses:</i>					
<i>Finance</i>	<i>10,000</i>	<i>10,000</i>			
<i>Goodwill</i>	<i>5,000</i>	<i>-</i>			
<i>written off</i>					
<i>To Net Profit</i>	<i>50,000</i>	<i>60,000</i>			
	<b><i>90,000</i></b>	<b><i>1,00,000</i></b>			

**NOTES****Solution :**

Alpha Ltd.,

Common Size Income Statement for the year ended 31<sup>st</sup> Dec. 2007 and 2008

<b>Particulars</b>	<b>2007</b>		<b>2008</b>	
	<b>Amount Rs.</b>	<b>%</b>	<b>Amount Rs.</b>	<b>%</b>
Sales		100	2,50,000	100
Less: Cost of sales	1,20,000	60	1,75,000	70
Gross profit (A)	80,000	40	75,000	30
Operating Expenses:				
Administration Expenses	12,500	6.25	15,000	6
Selling Expenses	7,500	3.75	10,000	4
Distribution Expenses	5,000	2.50	5,000	2
Operating Expenses (B)	25,000	12.50	30,000	12
Operating Profit (A-B)	55,000	27.50	45,000	18
Add: Non-Operating Income:				
Interest on investments	10,000	5.00	25,000	10
Total (C)	65,000	32.5	70,000	28
Non-Operating expenses:				
Finance expenses	10,000	5.00	10,000	4
Goodwill written off	5,000	2.50	-	-
Total Non-operating expenses (D)	15,000	7.50	10,000	4
Net Profit (C – D)	50,000	25.00	60,000	24

**NOTES****Illustration 2: Common size Balance Sheets of the same firm:**

*Beta Ltd., furnishes the following balance sheets for the years 2007 and 2008. Prepare common-size balance sheets.*

*Balance Sheet*

<i>Liabilities</i>	<i>2007 Rs.</i>	<i>2008 Rs.</i>	<i>Assets</i>	<i>2007 Rs.</i>	<i>2008 Rs.</i>
<i>Share Capital</i>	<i>1,00,000</i>	<i>1,50,000</i>	<i>Buildings</i>	<i>2,00,000</i>	<i>2,00,000</i>
<i>Reserves</i>	<i>3,00,000</i>	<i>3,50,000</i>	<i>Machinery</i>	<i>3,00,000</i>	<i>5,00,000</i>
<i>10% Debentures</i>	<i>1,00,000</i>	<i>1,50,000</i>	<i>Stock</i>	<i>1,00,000</i>	<i>1,50,000</i>
<i>Creditors</i>	<i>1,50,000</i>	<i>2,50,000</i>	<i>Debtors</i>	<i>1,00,000</i>	<i>1,25,000</i>
<i>Bills payable</i>	<i>50,000</i>	<i>40,000</i>	<i>Cash at bank</i>	<i>50,000</i>	<i>25,000</i>
<i>Tax payable</i>	<i>50,000</i>	<i>60,000</i>			
	<i>7,50,000</i>	<i>10,00,000</i>		<i>7,50,000</i>	<i>10,00,000</i>

**Solution :**

Beta Ltd.,

Common-size Balance Sheet as on 31<sup>st</sup> Dec. 2007 & 2008.

<b>Particulars</b>	<b>2007</b>		<b>2008</b>	
	<b>Amount Rs.</b>	<b>%</b>	<b>Amount Rs.</b>	<b>%</b>
<b>ASSETS:</b>				
Current Assets:				
Cash at Bank	50,000	6.67	25,000	2.50
Debtors	1,00,000	13.33	1,25,000	12.50
Stock	1,00,000	13.33	1,50,000	15.00
Total Current Assets (A)	2,50,000	33.33	3,00,000	30.00
Fixed Assets: Buildings	2,00,000	26.67	2,00,000	20.00
Machinery	3,00,000	40.00	5,00,000	50.00
Total Fixed assets (B)	5,00,000	66.67	7,00,000	70.00
Total Assets (A + B)	7,50,000	100.00	10,00,000	100.00
Liabilities and Capital:				
Creditors	1,50,000	20.00	2,50,000	25.00
Bills payable	50,000	6.67	40,000	4.00
Tax Payable	50,000	6.66	60,000	6.00

**NOTES**

Total current liabilities (A)	2,50,000	33.33	3,50,000	35.00
Long-term liabilities:				
10% Debentures (B)	1,00,000	13.33	1,50,000	15.00
Total liabilities (A + B) = C	3,50,000	46.67	5,00,000	50.00
Capital & Reserves:				
Share Capital	1,00,000	13.33	1,50,000	15.00
Reserves	3,00,000	40.00	3,50,000	35.00
Total shareholder's funds (D)	4,00,000	53.33	5,00,000	50.00
Total liabilities & capital (C + D)	7,50,000	100.00	10,00,000	100.00

**Illustration 3: Comparative Statements:**

The following are the profit & loss a/c and Balance sheet of ABC Ltd.,

*Profit and Loss A/c of ABC Ltd.*

<i>Particulars</i>	<i>2007 Rs. (in lakhs)</i>	<i>2008 Rs. (in lakhs)</i>	<i>Particulars</i>	<i>2007 Rs. (in lakhs)</i>	<i>2008 Rs. (in lakhs)</i>
<i>To material cost</i>	40	45	<i>By Sales revenue</i>	80	95
<i>To conversion cost</i>	20	20	<i>By Miscellaneous income</i>	10	6
<i>To operating exp.</i>	10	8			
<i>To Miscellaneous exp.</i>	5	7			
<i>To Net profit</i>	15	21			
	90	101		90	101

*Balance Sheet of ABC Ltd.*

<i>Liabilities</i>	<i>2007 Rs. (in lakhs)</i>	<i>2008 Rs. (in lakhs)</i>	<i>Assets</i>	<i>2007 Rs. (in lakhs)</i>	<i>2008 Rs. (in lakhs)</i>
<i>Share capital</i>	80	100	<i>Land &amp; Buildings</i>	25	20
<i>Reserves &amp; Surplus</i>	20	26	<i>Plant &amp; Machinery</i>	50	75
<i>Long-term liabilities</i>	20	20	<i>Furniture &amp; fittings</i>	10	10
<i>Current liabilities</i>	20	14	<i>Current assets</i>	55	50
			<i>Miscellaneous assets</i>	-	5
	140	160		140	160

From the above, prepare the statement comparative P&L A/c and the comparative balance sheet.

**NOTES****Solution:** Comparative Income Statement of ABC Ltd.

Particulars	2007	2008	Increase / Decrease		Particulars	2007	2008	Increase / Decrease	
			Amt	%				Amt	%
To materials cost	40	45	5	12.50	By sales revenue	80	95	15	18.75
To conversion cost	20	20	0	0.00	By Miscellaneous Income	10	6	-4	-40.00
To operating exp.	10	8	-2	-20.00					
To Miscellaneous exp.	5	7	2	40.00					
Total expenses	75	80	5	6.67					
To profit	15	21	6	40.00					
	90	101	11	12.22		90	101	11	12.22

## Comparative Balance Sheet of ABC Ltd.

Particulars	2007	2008	Absolute increase or decrease	Percentage increase or decrease
Equity share capital	80	100	20	25.00
Reserves and surplus	20	26	6	30.00
Long-term liabilities	20	20	0	0.00
Current liabilities	20	14	-6	-30.00
<b>Total of capital and liabilities</b>	<b>140</b>	<b>160</b>	<b>20</b>	<b>14.29</b>
Land & Buildings	25	20	-5	-20.00
Plant & Machinery	50	75	25	50.00
Furniture & Fittings	10	10	0	0.00
Current assets	55	50	-5	-9.09
Miscellaneous assets	0	5	5	-
<b>Total of assets</b>	<b>140</b>	<b>160</b>	<b>20</b>	<b>14.29</b>

**Illustration 4:**

*From the following Profit & Loss A/c and Balance sheet Prepare a Comparative income statement and comparative Balance sheet.*

**NOTES***Profit and Loss A/c. for the year ended 31<sup>st</sup> Dec.*

<i>Particulars</i>	<i>2006 Rs. (in lakhs)</i>	<i>2007 Rs. (in lakhs)</i>	<i>Particulars</i>	<i>2006 Rs. (in lakhs)</i>	<i>2007 Rs. (in lakhs)</i>
<i>To cost of goods sold</i>	500	640	<i>By Net sales</i>	700	900
<i>To Operating exp:</i>					
<i>Administrative</i>	20	20			
<i>Selling</i>	30	40			
<i>To Net Profit</i>	150	200			
	700	900		700	900

*Balance Sheet as on 31<sup>st</sup> Dec.*

<i>Liabilities</i>	<i>2006 Rs. (in lakhs)</i>	<i>2007 Rs. (in lakhs)</i>	<i>Assets</i>	<i>2006 Rs. (in lakhs)</i>	<i>2007 Rs. (in lakhs)</i>
<i>Bills payable</i>	50	75	<i>Cash</i>	50	70
<i>Tax payable</i>	100	150	<i>Debtors</i>	300	450
<i>Sundry creditors</i>	150	200	<i>Stock</i>	100	200
<i>15% Debentures</i>	100	150	<i>Land</i>	100	120
<i>10% Preference capital</i>	200	200	<i>Building</i>	250	225
<i>Equity capital</i>	300	300	<i>Plant</i>	200	180
<i>Reserves</i>	200	250	<i>Furniture</i>	100	80
	1,100	1,325		1,100	1,325

**Solution:****Comparative Income Statement**

<i>Particulars</i>	<i>2006 Rs. (in lakhs)</i>	<i>2007 Rs. (in lakhs)</i>	<i>Absolute increase or decrease Rs. (in lakhs)</i>	<i>Percentage increase or decrease Rs. (in lakhs)</i>
Net sales	700	900	+200	+28.57
Cost of goods sold	500	640	+140	+28.00
<b>Gross profit</b>	<b>200</b>	<b>260</b>	<b>+60</b>	<b>+30</b>
Operating Expenses:				
Administrative	20	20	-	-
Selling	30	40	+10	+33.33
<b>Total operating Expenses</b>	<b>50</b>	<b>60</b>	<b>+10</b>	<b>+20</b>
<b>Operating Profit</b>	<b>150</b>	<b>200</b>	<b>+50</b>	<b>+33.33</b>

**Workings:**

For example : Sales =  $(200/700) * 100 = 28.57$

**NOTES**Comparative Balance Sheet as on 31<sup>st</sup> Dec.

Particulars	2006 Rs. (in lakhs)	2007 Rs. (in lakhs)	Increase / Decrease	
			Amt Rs. (in lakhs)	% Rs. (in lakhs)
Current Assets:				
Cash	50	70	+20	+40
Debtors	300	450	+150	+50
Stock	100	200	+100	+100
<b>Total Current Assets</b>	<b>450</b>	<b>720</b>	<b>+270</b>	<b>+60</b>

Fixed Assets:				
Land	100	120	+20	+20
Building	250	225	-25	-10
Plant	200	180	-20	-10
Furniture	100	80	-20	-20
<b>Total Fixed Assets</b>	<b>650</b>	<b>605</b>	<b>-45</b>	<b>-7</b>
<b>Total Assets</b>	<b>1,100</b>	<b>1,325</b>	<b>+225</b>	<b>+20.45</b>
Current Liabilities:				
Bills payable	50	75	+25	+50
Sundry creditors	100	150	+50	+50
Taxes payable	150	200	+50	+33.33
<b>Total Current Liabilities</b>	<b>300</b>	<b>425</b>	<b>+125</b>	<b>+42</b>
15% Debentures	100	150	+50	+50
<b>Total Liabilities</b>	<b>400</b>	<b>575</b>	<b>+175</b>	<b>+44</b>
Capital & Reserves:				
10% Preference Capital	200	200	-	-
Equity capital	300	300	-	-
Reserves	200	250	+50	+25
<b>Share holder's funds</b>	<b>700</b>	<b>750</b>	<b>+50</b>	<b>+7</b>
<b>Total liabilities &amp; capital</b>	<b>1,100</b>	<b>1,325</b>	<b>+225</b>	<b>+20.45</b>

**Illustration 5: Trend Analysis:**

Calculate the trend percentages from the following figures:

<i>Year</i>	<i>Sales</i>	<i>Stock</i>	<i>Profit before tax</i> <i>Rs. (in lakhs)</i>
2004	1,881	709	321
2005	2,340	781	435
2006	2,655	816	458
2007	3,021	944	527
2008	3,768	1,154	672

**Solution:**

Trend Percentages (Base Year)

<b>Year</b>	<b>Sales</b>		<b>Stock</b>		<b>Profit before tax</b>	
	<b>Rs.</b> <b>(in lakhs)</b>	<b>Trend</b> <b>Percentage</b>	<b>Rs.</b> <b>(in lakhs)</b>	<b>Trend</b> <b>Percentage</b>	<b>Rs.</b> <b>(in lakhs)</b>	<b>Trend</b> <b>Percentage</b>
2004	1,881	100	709	100	321	100
2005	2,340	124	781	110	435	136
2006	2,635	141	816	115	458	143
2007	3,021	161	944	133	527	164
2008	3,768	200	1,154	162	672	209

Workings:

$$\text{Trend Percentage of sales for 2005} = (100/1881) * 2,340 = 124\%$$

**Illustration 6:**

From the following data relating to the asset side of the Balance sheet of New Ltd., for the period 31<sup>st</sup> Dec. 2005 to 31<sup>st</sup> Dec. 2008. You are required to calculate the trend percentages.

<i>Assets</i>	<i>As on 31<sup>st</sup> December</i>			
	<i>2005</i>	<i>2006</i>	<i>2007</i>	<i>2008</i>
<i>Cash</i>	100	120	80	140
<i>Debtors</i>	200	250	325	400
<i>Stock in trade</i>	300	400	350	500
<i>Other current assets</i>	50	75	125	150
<i>Land</i>	400	500	500	500
<i>Building</i>	800	1000	1200	1500
<i>Plant</i>	1000	1000	1200	1500
<b><i>Total</i></b>	<b>2,850</b>	<b>3,345</b>	<b>3,780</b>	<b>4,690</b>

**NOTES**

# NOTES

## Solution:

### Trend Percentages

Assets	December 31 <sup>st</sup> (Rs. In thousands)				Trend Percentage Base year 2005			
	2005	2006	2007	2008	2005	2006	2007	2008
Current Assets:								
Cash	100	120	80	140	100	120	80	140
Debtors	200	250	325	400	100	125	163	200
Stock in trade	300	400	350	500	100	133	117	167
Other current assets	50	75	125	150	100	150	250	300
<b>Total Current Assets</b>	<b>650</b>	<b>845</b>	<b>880</b>	<b>1190</b>	<b>100</b>	<b>129</b>	<b>135</b>	<b>183</b>
Fixed Assets:								
Land	400	500	500	500	100	125	125	125
Building	800	1000	1200	1500	100	125	150	175
Plant	1000	1000	1200	1500	100	100	120	150
<b>Total Fixed Assets</b>	<b>2200</b>	<b>2500</b>	<b>2900</b>	<b>3500</b>	<b>100</b>	<b>114</b>	<b>132</b>	<b>159</b>

### 1.2.12 Meaning of Ratio Analysis

In accounts, ratio may be defined as a numerical relationship between two related accounting figures and is calculated by dividing one by another.

Ratio analysis is a technique used for analysis and interpretation of financial statements. It helps us to analyse and understand the financial affairs and the strength and weakness of a firm. Extent and quality of analysis and interpretation depends on the caliber of the analyst.

Ratios indicate the symptoms like pulse rate, blood pressure, body temperature and their analysis and interpretation depends upon the competence of the analyst.

### 1.2.13 Steps in Ratio Analysis

- Determine the objective of analysis and accordingly select the relevant information from the financial statements.
- Calculate appropriate ratios using the relevant data.
- Compare the ratios with standards or past ratios or ratios of other firms engaged in the same industry.
- Interpret the ratios.

**1.2.14 Importance or Uses of Ratio Analysis**

- Helps in gauging the general efficiency of the management.
- Evaluates the liquidity and solvency position of firm.
- Facilitates management in decision making.
- Aids prospective investors in arriving at an investment decision.
- Helps management to initiate corrective action.
- Provides inputs to management in their forecasting and planning.
- Facilitates inter-firm comparison.
- Ratio analysis enables effective control over the business – measuring performances and comparing it with the standard.
- Plays a vital role in communicating the progress of the organisation to the owners and interested parties by using simplified and summarized ratios, thus aiding quick and better understanding.
- It helps in informing the financial strength and weakness of a firm in an easy and understandable manner.

**1.2.15 Limitation of Ratio Analysis or Cautions in Using Ratio Analysis**

- Differences in the definition of ratios make their calculations and interpretation difficult.
- Ratio analysis is done on the basis of financial statements. Such statements suffer from several limitations. Ratios derived from them are also subject to such limitations.
- Changes in price level render the interpretation of ratios invalid.
- It is difficult to find out a proper basis for comparison.
- Ratios just provide quantitative input, and its analysis and interpretation is subject to the personal bias and competence of the analyst.
- Ratios indicate what happened in the past, and the past need not necessarily be an indicator of the future.
- Financial statements can be easily window-dressed [i.e. manipulation of accounts] to conceal the real position and project a false picture. One should exercise caution while making a decision on the basis of ratios calculated from such statements.
- Firms differ substantially in their age, size, scale of operations, nature of products, etc. while making inter-firm comparisons, these factors are ignored. This renders interpretation ineffective.
- While preparing financial statements, different firms follow different accounting policies. In such a situation, interpretation by comparison serves no purpose.
- An analyst cannot rely on a single ratio and hence calculate several ratios. Too many ratios may lead to and compound confusion rather than reveal a meaningful conclusion.

# NOTES

## 1.2.16 Classification and Analysis of Ratios

Ratios can be classified in several ways depending upon the purpose of analysis. It should be noted that the basic rates are same, but the way they are classified varies with the objective of the analysis.

Generally, a firm or a company or an organisation will be analysed for the following:

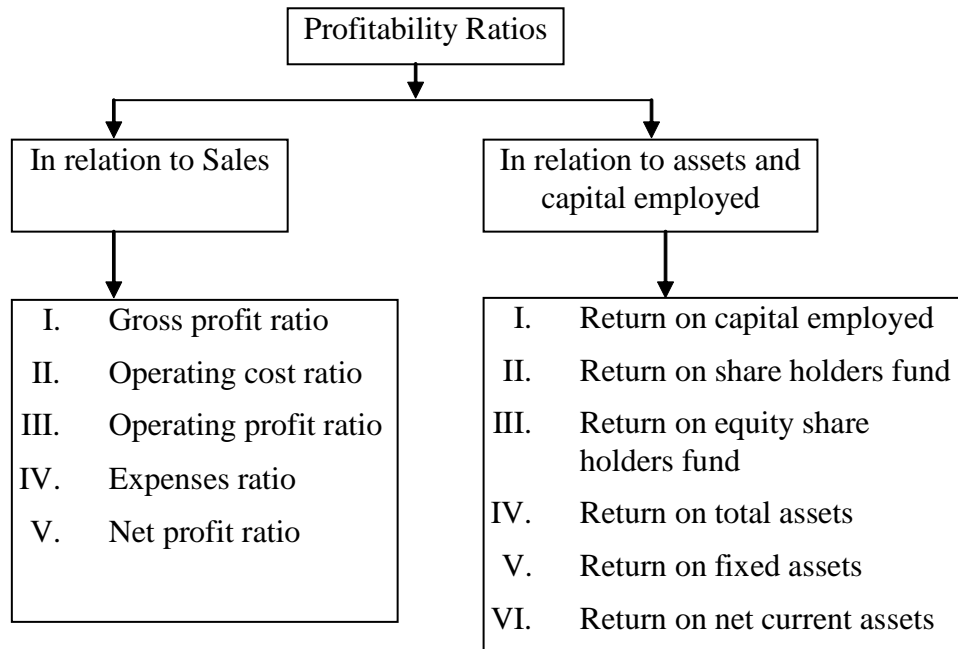
- 1) **Profitability** :- Has the company made good profit compared to its sales? Does such profit commensurate with the assets and capital employed by the firm?
- 2) **Liquidity** :- Does the company have enough money to pay its bills?
- 3) **Solvency** :- Will the company have sufficient capacity to service its long-term borrowings by paying interest on such loans promptly and repaying the principal on due dates?
- 4) **Asset usage** :- How has the organisation used its fixed and current assets.
- 5) **Gearing** :- Is the company mainly funded by shares or borrowed amounts?
- 6) **Perception in the stock market** :- How is the company rated in the stock market by investors and prospective investors?

In accordance with the above, ratio analysis is taken up under six major headings as follows.

- 1) Profitability ratios
- 2) Liquidity ratios
- 3) Solvency ratios
- 4) Asset usage or activity ratios
- 5) Capital Gearing ratio
- 6) Investors or Capital market ratios

## 1.2.17 Analysis of Profitability by Using Profitability Ratios

These ratios measure the profit earned by a business in relation to its sales, assets and capital employed. Profit depends upon sales which in turn is influenced by the investment made in the business. Hence, profitability can be studied as follows.



Profitability ratios in relation to sales

### [1] Gross profit ratio

This ratio shows the relationship between gross profit and sales effected. It is calculated as follows.

$$\text{Cross Profit ration} = \frac{\text{Gross Pr ofit}}{\text{Net Sales}} \times 100$$

Gross Profit = Net sales – Cost of goods sold

Net sales = Total sales – Sales return

Cost of goods sold = Opening stock + Purchases + Direct Expenses - Closing stock

This ratio indicates how much profit is earned per hundred rupees of sales. There is no standard norm for this ratio. A higher ratio may indicate sufficient margin left over to cover administration, office, selling and distribution expenses.

### [2] Operating Cost ratio

It studies the relationship of operating with sales and is computed as given below:

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

Operating cost = Cost of goods sold + Operating expenses.

# NOTES

Operating expenses contain the following:

- I. Administration and office expenses like salaries, office rent, insurance, etc.
- II. Selling and Distribution expenses like salesman, salaries, advertisement, etc.

This ratio indicates the operating costs incurred per hundred rupee of sales.

### [3] Operating Profit Ratio

It establishes a relationship between operating profit and sales.

$$\text{Operating profit Ratio} = \frac{\text{Operating profit}}{\text{Net Sales}} \times 100$$

Operating cost = Administration office expenses + Selling and Distribution expenses + Cost of goods sold.

Operating profit can also be calculated as follows:

Operating profit ratio = 100 – Operating cost ratio.

Both operating cost and operating profit ratios indicate the efficiency of the business. There is no standard yardstick for these two ratios.

### [4] Expenses Ratio

It indicates the relationship of various individual or specific expenses to net sales, and are worked out as follows:

$$(a) \text{ Cost of goods sold ratio} = \frac{\text{Cost of goods sold}}{\text{Net sales}} \times 100$$

$$(b) \text{ Administration and office expenses ratio} = \frac{\text{Administration and office expenses}}{\text{Net sales}} \times 100$$

$$(c) \text{ Selling and distribution expenses ratio} = \frac{\text{Selling and distribution expenses}}{\text{Net sales}} \times 100$$

$$(d) \text{ Non – operating expenses ratio} = \frac{\text{Non – operating expenses}}{\text{Net sales}} \times 100$$

Lower the ratios, greater is the profitability and vice versa.

### [5] Net Profit Ratio

This measures the overall profitability of the business and is calculated as follows:

$$\text{Net profit ratio} = \frac{\text{Profit after tax}}{\text{Net sales}} \times 100$$

It indicates the profit earned per hundred rupees of sales made. Higher the ratio, greater is the capacity of the firm to withstand adverse economic conditions and vice versa.

Profitability ratios in relation to assets and capital employed

**[1] Return on capital employed**

This ratio shows the relationship of profit before interest and tax with the capital employed in the business.

$$\text{Return on capital employed} = \frac{\text{PBIT}}{\text{Capital employed}} \times 100$$

PBIT = Profit Before Interest and Tax

Capital employed = Equity share capital + Preference share capital + Reserves and surplus - Fictitious assets, if any, + Long term liabilities.

Fictitious assets = Debit balance of profit and loss account + Unwritten off expenses shown on the asset side of balance sheet.

It indicates the profit earned per hundred of capital invested. A higher ratio shows the efficiency of the management in utilizing the capital entrusted to it vice versa.

**[2] Return on share holder's fund or Return on Net worth**

It studies the relationship between net profit and proprietors funds and is calculated as follows:

$$\text{Return on Share holder's Fund} = \frac{\text{PAT}}{\text{Share holder's Fund}} \times 100$$

Share Holder's Fund = Equity Share Capital + Preference Share Capital + Reserves and Surplus – Fictitious assets, if any.

A high ratio signifies better profitability on the owners funds.

**[3] Return on Equity Share Holder's Fund or Return on Equity Capital**

Equity share holders are the real owners of a company. After paying dividends to preference share holders at a fixed rate, whatever is the profit left over is what actually belongs to Equity share holders. So, equity share holders will be interested in knowing what returns they get. Such return is computed in the following way:

$$\text{Return on Equity Share holder's Fund} = \frac{\text{PAT} - \text{Preference Dividend}}{\text{Equity Share holder's Fund}} \times 100$$

PAT = Profit After Tax

Preference Dividend = Dividend paid to preference share holders.

Equity share holders fund = Equity share capital + Reserves and surplus – Fictitious assets, if any.

This ratio indicates the profits which can be made available to equity share holders as dividends.

## NOTES

### [4] Return on Total Assets

This measures the relation between profit before interest and tax and total assets. It is computed in the manner given below:

$$\text{Return on Total Assets} = \frac{\text{PBIT}}{\text{Total Assets}} \times 100$$

PBIT = Profit Before Interest and Tax

Total Assets = Net Fixed Assets + Current Assets – Fictitious Assets, if any.

This ratio indicates how efficiently the total assets have been used by the management.

### [5] Return on Fixed Assets

It is a ratio between PBIT and Fixed assets. Following is the formula used:-

$$\text{Return on fixed Assets} = \frac{\text{PBIT}}{\text{Net fixed Assets}} \times 100$$

Net Fixed Assets = Gross Fixed Assets – Depreciation

It indicates how efficiently fixed assets have been utilized in generating profit.

### [6] Return on Net Current Assets

It measures the profitability with respect to net current assets.

$$\text{Return on Net current Assets} = \frac{\text{PBIT}}{\text{Net Current Assets}}$$

Net Current Assets = Current Assets – Current liabilities.

Net current assets are also known as Working Capital. This ratio shows the profit earned per hundred rupee of investment made in working capital.

### 1.2.18 Analysis of Short Term Solvency of a Firm Using Liquidity Ratios

Liquidity refers to a firm's ability to pay its current bills, i.e. current liabilities, as and when they become due. Such current liabilities are paid by realizing amount from current assets. If current assets can pay off current liabilities, then the liquidity position is satisfactory and vice versa.

Ratios used for studying short term solvency

- Current Ratio
- Liquidity Ratio
- Absolute Liquidity Ratio

**[1] Current Ratio**

This is also known as working capital ratio. It is computed by dividing current assets by current liabilities.

$$\text{Current ratio} = \frac{\text{Current assets}}{\text{Current liabilities}}$$

Current Assets = Any asset which can be converted into cash within one year, and includes: Cash in hand, Cash at bank, Short term investments, Bills Receivable, Debtors, Stock, Work-in-progress, and Pre-paid expenses.

Current Liabilities = Any liability which has to be paid within one year, and includes: Outstanding expenses, Bills payable, Creditors, Short term advances received, Income-tax payable, Dividend payable and Overdraft.

The ideal ratio is 2:1, which implies that current asset be double that of current liabilities. The idea of maintaining current assets at double that of current liabilities is to provide for delays and losses in the realization of current assets.

**[2] Liquid or Quick or Acid Test Ratio**

Inventories and pre-paid expenses included in current assets cannot be quickly converted into cash within a short period without loss of value. Since the rest of current assets are considered more liquid, they are taken to study the short term solvency position of a firm in a more rigorous way.

This ratio shows the relationship between quick assets and quick liabilities, and is computed as follows.

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

$$\text{Quick Assets} = \text{Current Assets} - [\text{Stock} + \text{Pre-paid expenses}]$$

$$\text{Quick Liabilities} = \text{Current Liabilities} - \text{Overdraft.}$$

Here, a ratio of 1:1 is considered satisfactory.

**[3] Absolute Liquidity Ratio**

There may be doubts regarding realization of debtors and bills receivable into cash immediately or in time. Hence they are also excluded from current assets while studying absolute liquidity position.

$$\text{Absolute Liquidity Ratio} = \frac{\text{Absolute Liquidity Assets}}{\text{Quick liabilities}}$$

$$\text{Absolute Liquid Assets} = \text{Cash in hand} + \text{Cash at Bank} + \text{Marketable securities.}$$

The acceptable norm for this ratio is 0.5:1 or 50%

# NOTES

## 1.2.19 Analysis of long term solvency of a firm using Solvency Ratios

Solvency denotes the ability of a firm to meet its long term obligations in the form of payment of interest on its long term borrowings and repayment of such principal.

Ratios used for studying long-term solvency:

- Debt-Equity ratio or External-Internal Equity Ratio.
- Proprietary Ratio
- External equities to Total Assets Ratio.
- Fixed Assets to Proprietor's fund ratio.
- Current Assets to Proprietor's fund ratio.
- Revenue Reserves to Equity Capital ratio.
- Interest coverage ratio.

### [1] Debt-Equity ratio or External-Internal Equity ratio

It shows the relative claim of outsiders and the owners [i.e. share holders] against the firm's assets. It is calculated as follows.

$$\text{Debt - Equity Ratio} = \frac{\text{Ousiders funds}}{\text{Share holders fund}} \quad (\text{Or}) \quad \frac{\text{External Equities}}{\text{Internal Equities}}$$

Outsider's funds refer to liabilities due to outsiders, and include both long-term and short-term liabilities.

Share Holder's Funds = Equity capital + Preference capital + Reserves and surplus – Fictitious assets, if any.

The ideal ratio is 1:1.

### [2] Proprietary Ratio

This studies the relationship between share holder's funds and total assets and is worker as follows:

$$\text{Proprietary Ratio} = \frac{\text{Share holders funds}}{\text{Total Assets}} \times 100$$

This ratio helps the creditors to find out the proportion of total assets funded by share holders funds. Higher the ratio, more secured is the position of creditors and vice versa.

### [3] External Equities to Total Assets Ratio

This ratio shows the proportion of total cash financed by total liabilities to outsiders and is computed as follows:

$$\text{External Equity to Total Assets Ratio} = \frac{\text{Total liabilities to outsiders}}{\text{Total Assets}} \times 100$$

Lower the ratio, more satisfactory or stable is the long term solvency of the company.

**[4] Fixed Assets to Proprietors fund ratio**

It is used to find out the percentage of owners funds invested in fixed assets.

$$\text{Fixed Assets to Proprietors Funds Ratio} = \frac{\text{Net Fixed Assets}}{\text{Proprietors Funds}} \times 100$$

Net Fixed Assets = Gross Fixed Assets – Depreciation

Proprietors Funds = Equity capital + Preference capital + Reserve and Surplus – Fictitious assets, if any.

If the ratio is greater than hundred percent, it means creditors obligation have been used to fund a part of fixed assets.

**[5] Current Assets to Proprietors Fund Ratio**

This ratio shows the percentage of owners funds invested in current assets.

$$\text{Current Assets to Proprietors Funds Ratio} = \frac{\text{Current Assets}}{\text{Proprietors Funds}}$$

**[6] Revenue Reserves to Equity Capital Ratio**

This is calculated as follows:

$$\text{Revenue Reserve to Equity Capital Ratio} = \frac{\text{Revenue Reserve}}{\text{Paid up – Equity Capital}} \times 100$$

It reveals the policy followed by the firm with regard to distribution of dividends. A high ratio indicates a conservative dividend policy and increased plough back of profits. Higher the ratio, better is the financial position.

**[7] Interest Coverage Ratio or Debt Service Ratio**

It shows the relationship between PBIT and fixed interest charges. Following formula is used.

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

PBIT = Profit Before Interest and Tax.

This is used by long term creditors of a firm to judge the company's ability to pay interest on their long term borrowings. Generally, higher the ratio, more secure are the creditors and vice versa.

**1.2.20 Analysis of asset usage using Activity Ratios or Efficiency Ratios**

These assets are used to find out how efficiently the firm has used its fixed and current assets.

# NOTES

Ratios used for studying asset usage are as follows.

- Total Assets Turnover ratio
- Fixed Assets Turnover ratio
- Current Assets Turnover ratio
- Working capital Turnover ratio
- Stock turnover ratio or stock velocity
- Debtors turnover ratio or debtors velocity
- Creditors turnover ratio or creditors velocity

## [1] Total Assets Turnover Ratio

It shows the relationship between sales and total assets.

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

Net Sales = Gross Sales – Sales Returns

Total Assets = Fixed Assets + Current Assets

This ratio indicates the sales generated for every one rupee of total assets owned and used.

## [2] Fixed Assets Turnover Ratio

This ratio shows the extent of utilization of fixed assets in generating sales.

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

Net Fixed Assets = Gross Fixed Assets – Depreciation

Higher ratio indicates efficient utilization of fixed assets and vice versa.

## [3] Current Assets Turnover Ratio

It studies the relationship between sales and current assets.

$$\text{Current Assets Turnover Ratio} = \frac{\text{Net Sales}}{\text{Current Assets}}$$

Higher the ratio, better is the utilization of current assets in generating sales and vice versa.

## [4] Working Capital Turnover Ratio

This is calculated as follows:

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

Net Working Capital = Current Asset – Current Liabilities

A higher ratio indicates lesser investment in working capital in comparison with sales and hence more profit. A lower ratio signifies otherwise.

### [5] Working Capital Management Ratios

Working capital is concerned with the ability of a firm to pay its short term obligations. Working capital is the excess of current assets over current liabilities. Working capital management is concerned with managing the ability of the firm to pay its way through short term dues.

Stock, Debtors and Creditors are all a part of working capital management in the same way as liquidity was part of working capital management. Stock, debtors and creditors result in spending, locking-up and saving of working capital.

Too much money spent on stock implies high spending and unnecessary blocking of money.

Huge amount loaned to debtors lock the money which would otherwise be available for paying creditors, making short term investment, etc.

If creditors are too high, lenders might consider it too risky to give fresh credit, and in case of cash crunch, the firm might not be in a position to pay its creditors.

Working capital management is thus concerned with proper balancing of stock, debtors and creditors.

### [6] Stock Turnover Ratio or Stock Velocity

This ratio tells us the number of times the stock is turned over in a year, and is computed as follows

$$\text{Stock Turnover Ratio} = \frac{\text{Cost of goods sold or Net Sales}}{\text{Average Stock}}$$

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

(or)

Net Sales – Gross Profit

Average Stock = Opening Stock + Closing Stock / 2

A high ratio indicates efficient utilization of inventory and vice versa.

From the number of times the stock is turned over in a year, one can compute the average number of days the inventory remains in godown, as follows.

$$\text{Period for which stock remains in godown} = \frac{365 \text{ days or } 52 \text{ weeks or } 12 \text{ months}}{\text{Stock Turnover Ratio}}$$

Lesser the period, better is the utilization of stock

**NOTES****[7] Debtors Turnover Ratio or Debtors Velocity**

This indicates the number of times, debtors are converted into cash in a year.

It is calculated as follows:

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

Net Credit Sales = Total Sales – Cash Sales – Sales Returns

$$\text{Average Debtors} = \frac{\begin{array}{l} \{ \text{opening Debtors} + \text{opening Bills Receivable} + \\ \text{Closing Debtors} + \text{Closing Bills Receivable} \} \end{array}}{2}$$

A high ratio indicates efficient management of debts and vice versa.

From the number of times debtors are turned over, one can compute the number of days debtors take to pay the company.

$$\text{Averages Debt Collection period} = \frac{365 \text{ days or } 52 \text{ weeks } 12 \text{ months}}{\text{Debtors Turnover Ratio}}$$

A low debt collection period indicates good quality of debtors and rapid collection of money from them and vice versa.

**[8] Creditors Turnover Ratio or Creditors Velocity**

It shows the number of times, creditors are paid in a year.

$$\text{Creditors Turnover Ratio} = \frac{\text{Net Credit Purchase}}{\text{Average Creditors}}$$

Net Credit Purchases = Total Purchases – Cash Purchases – Purchase Returns

$$\text{Average Creditors} = \frac{\begin{array}{l} \{ \text{opening Creditors} + \text{opening Bills Receivable} + \\ \text{Closing Creditors} + \text{Closing Bills Receivable} \} \end{array}}{2}$$

A high ratio means shorter payment period and vice versa.

From the number of times creditors are turned over or paid in a year, one can calculate the period which the firm takes to pay the creditors.

$$\text{Creditors payment} = \frac{365 \text{ days or } 52 \text{ weeks } 12 \text{ months}}{\text{Creditors Turnover Ratio}}$$

Low credit payment period indicates quick payment made to creditors and vice versa.

### 1.2.21 Capital Gearing Ratio

This ratio indicates whether the company is financed mainly by fixed interest bearing loans and securities or by equity shares. Capital Gearing ratio explains the relationship between equity shareholders fund or one hand and preference share capital and fixed interest bearing securities on the other.

$$\text{Capital Gearing Ratio} = \frac{\text{Preference Capital} + \text{Fixed interest bearing securities}}{\text{Equity share holders fund}}$$

Equity Shareholder's Fund = Equity Capital + Reserves and Surplus – Fictitious assets, if any.

If the ratio is more than one, capital structure of the company is said to be highly geared and vice versa.

### 1.2.22 Investors Ratios or Capital Market Ratios

These ratios are very useful for investors and potential investors in the capital market.

Pertinent Investors Ratios

- Earnings per share
- Dividend pay-out ratio
- Dividend yield ratio
- Price earnings ratio

#### [1] Earnings per share [EPS]:

This ratio tells us the profit earned per equity share, as is calculated as follows:

$$\text{EAS} = \frac{\text{PAT} - \text{Preferences Dividend}}{\text{Number of equity shares}}$$

#### [2] Dividend pay-out ratio:

It indicates what portion of earnings per equity share has been paid as dividends and what portion retained by the firm.

$$\text{Dividend pay - out Ratio} = \frac{\text{Dividend per share}}{\text{Earning per shar}}$$

#### [3] Dividend yield ratio:

It indicates the real rate of return on investment in the shares of a company.

$$\text{P E Ratio} = \frac{\text{Market Price per equity share}}{\text{Earning per shar}}$$

# NOTES

## [4] Price earnings ratio or PE ratio:

This establishes a relationship between market price per equity share and earnings per share.

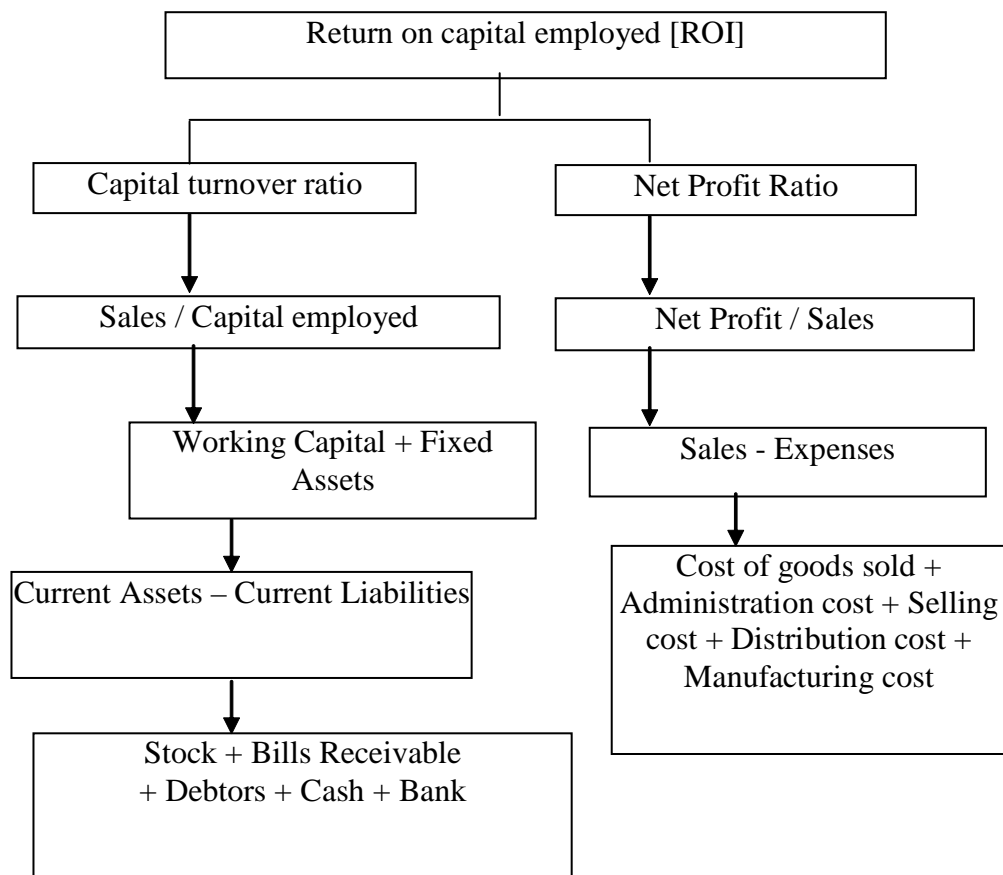
$$\text{P E Ratio} = \frac{\text{Market price per equity share}}{\text{Earnings per share}}$$

A high P E ratio indicates the confidence the investors place on the company.

### 1.2.23 DU Pont Chart

This chart was pioneered by Du Pont Company of USA and got widespread recognition. It was used by many firms in some form or other across the globe as a tool for financial analysis.

The chart given by Du Pont company is given below:



ROI represents the earning capacity of a firm. ROI depends upon two ratios, namely capital turnover and Net profit ratio. These two ratios are influenced by several factors. Any change in the factors will affect the two ratios and consequently the earning power of the firm.

For instance, increase in manufacturing cost without a corresponding increase in selling price, will reduce the profit, which in turn will affect the ROI.

### 1.2.24 Classification of problems encountered in ratio analysis

For better comprehension, problems in ratio analysis can be broadly trifurcated as follows

- (a) **Calculation of ratios from financial statements**
- (b) **Calculation of missing accounting information from given ratios.**
- (c) **Construction of financial statements from given ratios.**
  - (i) Construction of Trading Account from given ratios.
  - (ii) Construction of Trading A/c and P&LA/c from given ratios.
  - (iii) Construction of Balance Sheet from given ratios.
  - (iv) Construction of Trading and P&LA/c and Balance Sheet from given ratios.

### Calculation of ratios from the Financial Statements

#### Illustration 7:

Alpha manufacturing co. has drawn up the following profit and loss a/c for the year ended 31<sup>st</sup> March, 2006.

<i>Particulars</i>	<i>Rs.</i>	<i>Particulars</i>	<i>Rs.</i>
<i>To opening stock</i>	26,000	<i>By Sales</i>	1,60,000
<i>To Purchase</i>	80,000	<i>By Closing Stock</i>	38,000
<i>To Wages</i>	24,000		
<i>To Manufacturing Exp.</i>	16,000		
<i>To Gross Profit</i>	52,000		
	1,98,000		1,98,000
<i>To Selling and Distribution Exp.</i>	4,000	<i>By Gross Profit</i>	52,000
<i>To Administrative Exp.</i>	22,800	<i>By Compensation for acquisition of land</i>	4,800
<i>To General Expenses</i>	1,200		
<i>To value of furniture lost by fire</i>	800		
<i>To Net Profit</i>	28,000		
	56,800		56,800

**NOTES**

You are required to find out:

(a) Gross profit ratio (b) Net profit ratio (c) Operating ratio (d) Operating N.P to Net sales ratio.

**Solution:**

$$\begin{aligned} \text{(a) Gross profit ratio} &= \frac{\text{Gross profit}}{\text{Sales}} \times 100 \\ &= \frac{52,000}{1,60,000} \times 100 \\ &= 32.50\% \end{aligned}$$

$$\begin{aligned} \text{(b) Nets profit ratio} &= \frac{\text{Net profit}}{\text{Sales}} \times 100 \\ &= \frac{28,000}{1,60,000} \times 100 \\ &= 17.50\% \end{aligned}$$

$$\text{(c) Operating Ratio} = \frac{\text{Cost of good sold} + \text{operating expences}}{\text{Sales}} \times 100$$

$$\begin{aligned} \text{Cost of goods sold} &= \text{Sales} - \text{Gross profit} \\ &= 1,60,000 - 52,000 \\ &= 1,08,000 \end{aligned}$$

$$\begin{aligned} \text{Operating expences} &= 4,000 + 22,800 + 1,200 \\ &= \text{Rs.}28,000 \end{aligned}$$

$$\begin{aligned} \text{Operating Ratio} &= \frac{1,08,000 + 28,000}{1,60,000} \times 100 \\ &= \frac{1,36,000}{1,60,000} \times 100 \\ &= 85\% \end{aligned}$$

$$\text{(d) Operating N.P to Net sales Ratio} = \frac{\text{Operating profit}}{\text{Sales}} \times 100$$

$$\begin{aligned} \text{Operating profit} &= \text{NP} + \text{Non-operating expences} - \text{Non-operating income} \\ &= 28,000 + 800 - 4,800 \\ &= \text{Rs.}32,000 \end{aligned}$$

$$\begin{aligned} \text{Operating N.P to Net sales Ratio} &= \frac{32,000}{1,60,000} \times 100 \\ &= 20\% \end{aligned}$$

**Illustration 8:**

From the following balance sheet and additional information you are required to calculate.

(a) Return on total resources (b) Return on capital employed

(c) Return on share holder's funds.

Balance sheet as on 31st March 2007

<i>Liabilities</i>	<i>Rs.</i>	<i>Assets</i>	<i>Rs.</i>
<i>Equity shares capital (Rs.10)</i>	<i>8,00,000</i>	<i>Fixed Assets</i>	<i>10,00,000</i>
<i>Reserves</i>	<i>2,00,000</i>	<i>Current Assets</i>	<i>3,60,000</i>
<i>8% Debentures</i>	<i>2,00,000</i>		
<i>Creditors</i>	<i>1,60,000</i>		
	<i>13,60,000</i>		<i>13,60,000</i>

Net operating profit before tax is Rs.2, 80,000. Assume tax rate at 50%.

**Solution:**

$$\begin{aligned} \text{Return on total Resources} &= \frac{\text{Profit before tax}}{\text{Total assets}} \times 100 \\ &= \frac{2,80,000}{13,60,000} \times 100 \\ &= 20.59\% \end{aligned}$$

$$\text{Return on Capital employed} = \frac{\text{Profit before interest \& tax}}{\text{Capital employed}} \times 100$$

$$\text{Profit before tax} = \text{Rs.2, 80, 000}$$

$$\text{Add: Interest } 2, 00, 000 * 8/100 = 16, 000$$

$$\text{Profit before Interest \& tax} = \underline{2, 96, 000}$$

$$\begin{aligned} \text{Capital employed} &= 8, 00, 000 + 2, 00, 000 + 2, 00, 000 \\ &= \text{Rs.12, 00, 000} \end{aligned}$$

**NOTES**

$$\begin{aligned} \text{Return on Capital employed} &= \frac{2,96,000}{12,00,000} \times 100 \\ &= 24.67\% \end{aligned}$$

$$\text{Return on Share holder's fund} = \frac{\text{Profit after tax}}{\text{Share holder's fund}} \times 100$$

$$\begin{aligned} \text{Profit before tax} &= \text{Rs. } 2,80,000 \\ \text{Less: Tax @ 50\%} &= \underline{\text{Rs. } 1,40,000} \\ \text{Profit after tax} &= \underline{\text{Rs. } 1,40,000} \end{aligned}$$

$$\begin{aligned} \text{Return on Share holder's fund} &= \frac{1,40,000}{10,00,000} \times 100 \\ &= 14\% \end{aligned}$$

**Illustration 9:**

From the following Balance Sheet, calculate

- (a) Debt-equity ratio (b) Liquidity ratio  
(c) Fixed assets to current assets ratio (d) Fixed asset turnover ratio

<i>Liabilities</i>	<i>Rs.</i>	<i>Assets</i>	<i>Rs.</i>
<i>Equity shares</i>	<i>1,00,000</i>	<i>Goodwill</i>	<i>60,000</i>
<i>Reserves</i>	<i>20,000</i>	<i>Fixed Assets</i>	<i>1,40,000</i>
<i>Profit &amp; Loss A/c</i>	<i>30,000</i>	<i>Stock</i>	<i>30,000</i>
<i>Secured Loan</i>	<i>80,000</i>	<i>Sundry debtors</i>	<i>30,000</i>
<i>Sundry Creditors</i>	<i>50,000</i>	<i>Advances</i>	<i>10,000</i>
<i>Provision for taxes</i>	<i>20,000</i>	<i>Cash balance</i>	<i>30,000</i>
	<i>3,00,000</i>		<i>3,00,000</i>

The sale for the year was Rs.5, 60,000.

**Solution:**

$$\text{Debt - equity Ratio} = \frac{\text{Debt}}{\text{Equity}}$$

$$\begin{aligned} \text{Debt} &= \text{Secured Loan} + \text{Creditors} + \text{Provision for tax} \\ &= 80,000 + 50,000 + 20,000 = \text{Rs. } 1, 50,000 \\ \text{Equity} &= \text{Share capital} + \text{Reserves} + \text{P\&LA/c} - \text{Goodwill} \\ &= 1,00,000 + 20,000 + 30,000 - 60,000 = \text{Rs. } 90,000 \end{aligned}$$

$$\begin{aligned} \text{Debt - equity Ratio} &= \frac{1,50,000}{90,000} \\ &= 1.67 : 1 \end{aligned}$$

$$(b) \text{ Liquidity} = \frac{\text{Liquid Asset}}{\text{liquid Liabilites}}$$

$$\begin{aligned} \text{Liquid Asset} &= \text{S. Debtors} + \text{Advances} + \text{Cash} \\ &= 30,000 + 10,000 + 30,000 = \text{Rs. } 70,000 \end{aligned}$$

$$\begin{aligned} \text{Liquid Liabilities} &= \text{Sec. Loan} + \text{Creditors} + \text{Prov. of tax} \\ &= 80,000 + 50,000 + 20,000 \\ &= \text{Rs. } 1,50,000 \end{aligned}$$

$$\begin{aligned} \text{Liquid Ratio} &= \frac{70,000}{1,50,000} \\ &= 0.47 : 1 \end{aligned}$$

$$\begin{aligned} (c) \text{ Fixed Assets to current Assets Ratio} &= \frac{\text{Fixed Aasset}}{\text{Current Assets}} \\ &= \frac{1,40,000}{10,00,000} = 1.4 : 1 \end{aligned}$$

$$\begin{aligned} (d) \text{ Fixed Assets Turnover Ratio} &= \frac{\text{Sales}}{\text{Fixed Aasset}} \\ &= \frac{5,60,000}{10,40,000} = 4 \text{ times} \end{aligned}$$

**Illustration 10:**

*From the following particulars calculate*

- (a) *Current ratio*                      (b) *Liquid ratio*                      (c) *Proprietary ratio*  
 (d) *Debt-Equity ratio*                      (e) *Capital Gearing ratio*

**NOTES**

<i>Liabilities</i>	<i>Rs.</i>	<i>Assets</i>	<i>Rs.</i>
6,000 Equity shares of Rs.100 each	5,00,000	Land & Building	6,00,000
2,000 8% preference shares of Rs.100 each	2,00,000	Plant & Machinery	5,00,000
4,000 9% Debentures of Rs.100 each	4,00,000	Stock	2,40,000
Reserves	3,00,000	Debtors	2,00,000
Creditors	1,50,000	Cash & bank	55,000
Bank Overdraft	50,000	Prepaid expenses	5,000
	16,00,000		16,00,000

**Solution:**

$$(a) \text{ current Ratio} = \frac{\text{Current Asset}}{\text{Current Liabilities}}$$

$$\begin{aligned} \text{Current Assets} &= \text{Stock} + \text{Debtors} + \text{Cash} + \text{Bank} + \text{Prepaid expenses} \\ &= \text{Rs. } 2,40,000 + 2,00,000 + 55,000 + 5,000 \\ &= \text{Rs. } 5,00,000 \end{aligned}$$

$$\begin{aligned} \text{Current Liabilities} &= \text{Creditors} + \text{Bank Overdraft} \\ &= \text{Rs. } 1,50,000 + 50,000 \\ &= \text{Rs. } 2,00,000 \end{aligned}$$

$$\text{current Ratio} = \frac{\text{Rs. } 5,00,000}{2,00,000} = 2.5 : 1$$

$$(b) \text{ Liquid Ratio} = \frac{\text{Liquid Aasset}}{\text{Liquid Liabilities}}$$

$$\begin{aligned} \text{Liquid assets} &= \text{Current assets} - \text{Stock} - \text{Prepaid expenses} \\ &= \text{Rs. } 5,00,000 - 2,40,000 - 5,000 \\ &= \text{Rs. } 2,55,000 \end{aligned}$$

$$\begin{aligned} \text{Liquid Liabilities} &= \text{Current liabilities} - \text{Overdraft} \\ &= \text{Rs. } 2,00,000 - 50,000 \\ &= \text{Rs. } 1,50,000 \end{aligned}$$

$$\text{Liquid Ratio} = \frac{2,55,000}{1,50,000} = 1.7 : 1$$

$$(c) \text{ Proprietary Ratio} = \frac{\text{Proprietor's Funds}}{\text{Total tangible assets}}$$

$$\begin{aligned} \text{Proprietor's funds} &= \text{Equity share capital} + \text{Preference share capital} + \text{Reserves \& Surplus} \\ &= \text{Rs. } 5,00,000 + 2,00,000 + 3,00,000 \\ &= \text{Rs. } 10,00,000 \end{aligned}$$

$$\text{Total tangible assets} = \text{Rs. } 16,00,000$$

$$= \frac{10,00,000}{16,00,000} = 0.6 \text{ times}$$

$$(d) \text{ Debt - Equity Ratio} = \frac{\text{External Equities}}{\text{Internal Equities}} = \frac{\text{Debt}}{\text{Equity}}$$

$$\begin{aligned} \text{Debt} &= \text{Debentures} + \text{Current Liabilities} \\ &= 4,00,000 + 2,00,000 \\ &= \text{Rs. } 6,00,000 \end{aligned}$$

$$\text{Equity} = \text{Proprietor's funds} = \text{Rs. } 10,00,000$$

$$= \frac{6,00,000}{10,00,000} = 0.6 : 1$$

$$(e) \text{ Capital gearing Ratio} = \frac{\text{Preference Capital} + \text{Fixed interest securities}}{\text{Equity holder's fund}}$$

$$\text{Fixed interest securities} = \text{Debentures} + \text{long term loan}$$

$$\text{Equity holder's fund} = \text{Equity capital} + \text{Reserves \& Surplus}$$

$$= \frac{2,00,000 + 4,00,000}{5,00,000 + 3,00,000} = \frac{6,00,000}{8,00,000} = 0.75 : 1$$

### Illustration 11:

*From the following information, calculate average collection period.*

**NOTES**

<i>Particulars</i>	<i>Rs.</i>
<i>Total Sales</i>	<i>4,00,000</i>
<i>Cash Sales</i>	<i>80,000</i>
<i>Sales returns</i>	<i>28,000</i>
<i>Debtors at the end</i>	<i>36,000</i>
<i>Bills receivable at the end</i>	<i>8,000</i>

**Solution:**

Total Sales	4, 00,000
Less: Cash Sales	<u>80,000</u>
	3, 20,000
Less: Sales returns	<u>28,000</u>
Net Credit Annual Sales	<u>2, 92,000</u>

$$\begin{aligned} \text{Average Collection Period} &= \frac{\text{Debtors} + \text{Bills receivable}}{\text{Net Credit sales}} \\ &= \frac{36,000 + 8,000}{2,92,000} \times 365 = 55 \text{ days} \end{aligned}$$

**Illustration 12:**

From the following information, calculate average payment period.

<i>Particulars</i>	<i>Rs.</i>
<i>Total Purchases</i>	<i>5,81,000</i>
<i>Cash Purchases</i>	<i>30,000</i>
<i>Purchases returns</i>	<i>51,000</i>
<i>Creditors at the end</i>	<i>1,05,000</i>
<i>Bills receivable at the end</i>	<i>60,000</i>

**Solution:**

Total Purchases	5, 81,000
Less: Cash Purchases	<u>30,000</u>
	5, 51,000
Less: Purchases returns	<u>51,000</u>
Credit Sales	<u>5, 00,000</u>

$$\begin{aligned} \text{Average Payment Period} &= \frac{\text{Creditors + Bills Payable}}{\text{Net credit sales}} \times 365 \\ &= \frac{1,50,000 + 60,000}{5,00,000} \times 365 = 120 \text{ days} \end{aligned}$$

**Illustration 13:**

*Shakura Ltd. provides the following information:*

<i>Cash sales during the year</i>	<i>3, 00,000</i>
<i>Credit sales during the year</i>	<i>5, 40,000</i>
<i>Return inwards</i>	<i>40,000</i>
<i>Trade debtors in the beginning</i>	<i>1, 00,000</i>
<i>Bills receivable in the beginning</i>	<i>10,000</i>
<i>Trade debtors at the end</i>	<i>84,000</i>
<i>Bills receivable at the end</i>	<i>6,000</i>
<i>Provision for bad &amp; doubtful debts</i>	<i>10,000</i>

*Calculate:*

*(a) Debtors turnover ratio*

*(b) Average Collection period*

**Solution:**

$$\text{Net Credit Sales} = 5, 40,000 - 40,000 = \text{Rs. } 5, 00,000$$

$$\begin{aligned} \text{Average Debtors} &= \frac{\text{op.Drs} + \text{Clo.Drs}}{2} \\ &= \frac{1,00,000 + 84,000}{2} = \text{Rs. } 92,000 \end{aligned}$$

$$\begin{aligned} \text{Average B/R} &= \frac{\text{op.Drs} + \text{Clo.Drs}}{2} \\ &= \frac{10,000 + 6,000}{2} = \text{Rs. } 8,000 \end{aligned}$$

$$\text{(a) Debtors Turnover Ratio} = \frac{\text{Net Credit Sales}}{\text{Debtors} + \text{B/R}}$$

**NOTES**

$$= \frac{5,00,000}{92,000 + 8,000} = 5 \text{ times}$$

$$(b) \text{ Average Collection Period} = \frac{\text{Debtors} + \text{B/R}}{\text{Net Credit Sales}} \times 365$$

$$= \frac{92,000 + 8,000}{5,00,000} \times 365 = 73 \text{ days}$$

**Calculation of missing accounting information from given ratios:****Illustration 14:**

Calculate (a) Current Assets (b) Liquid Assets (c) Inventory

Current ratio = 2.6 : 1

Liquid ratio = 1.5 : 1

Current Liabilities = Rs. 40,000

**Solution:**

$$(a) \text{ Current Assets} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

$$2.6 = \frac{\text{Current Assets}}{40,000}$$

$$\text{Current Assets} = 2.6 * 40,000 = \text{Rs.}104,000$$

$$(b) \text{ Liquid Ratio} = \frac{\text{Liquid Assets}}{\text{Current Liabilities (or) Liquid Liabilities}}$$

$$1.5 = \frac{\text{Liquid Assets}}{40,000}$$

$$\text{Liquid assets} = 1.5 * 40,000 = \text{Rs.}50,000$$

$$\text{Liquid assets} = \text{Current assets} - \text{Inventory}$$

$$60,000 = 104,000 - \text{Inventory}$$

$$\text{Inventory} = \text{Rs.}104,000 - 60,000$$

$$\text{Inventory} = \text{Rs.}44,000$$

**Illustration 15:**

From the following particulars find out:

(i) Current assets      (ii) Current liabilities      (iii) Liquid assets      (iv) stock

Particulars:      Current ratio = 2.8

Acid test ratio = 1.5

Working capital = Rs.162,000

**Solution:**

Current ratio = 2.8 : 1

Let current liabilities be X, then current assets will be 2.8 X

Working capital = Current assets – Current liabilities

162,000 = 2.8X – 1X

162,000 = 1.8X

X = 162,000/1.8 = Rs.90,000

X = 90,000 = Current liabilities

Current assets = 2.8X = 2.8 \* 90,000 = Rs.252,000

$$\text{Acid Test Ratio} = \frac{\text{Liquid Assets}}{\text{Current Laibilitie s}}$$

$$1.5 = \frac{\text{Liquid Assets}}{90,000}$$

Liquid assets = 1.5\*90,000 = Rs.135, 000

Liquid assets = Current assets – Stock

135,000 = 252,000 – Stock

Stock = 252,000 – 135,000

Stock = Rs. 117,000

# NOTES

## Illustration 16:

From the following particulars of X company limited

(a) Sales      (b) Debtors      (c) Closing stock      (d) Creditors

Debtor's velocity – 3 months

Stock turnover ratio – 8

Creditor's velocity – 2 months

Gross profit ratio – 25%

Gross profit for the year was Rs.400, 000, Closing stock was Rs.10, 000 more than the opening stock.

### Solution:

$$\text{Gross profit ratio} = \frac{\text{Gross profit}}{\text{Sales}} \times 100$$

$$25 = \frac{4,00,000}{\text{Sales}} \times 100$$

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

$$\text{Debtors velocity} = \frac{\text{Debtors B/R}}{\text{Sales}} \times 12$$

$$3 = \frac{\text{Debtors}}{16,00,000} \times 12$$

$$3 * 16,00,000 = \text{Debtors} * 12$$

$$(b) \text{ Debtors} = \frac{3 \times 16,00,000}{12} = \text{Rs.}4,00,000$$

$$\text{Stock turnover ratio} = \frac{\text{Cost of goods sold}}{\text{Average Stock}}$$

$$\begin{aligned} \text{Cost of goods sold} &= \text{Sales} - \text{Gross profit} \\ &= \text{Rs. } 16,00,000 - 400,000 = \text{Rs. } 12,00,000 \end{aligned}$$

$$\text{Stock Velocity} = 8 = \frac{12,00,000}{\text{Average Stock}}$$

$$\text{Average Stock} = \frac{12,00,000}{8} = \text{Rs.}1,50,000$$

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

$$\text{Closing stock} = \text{Opening stock} + 10,000$$

$$\text{Total Stock} = 2 * \text{Average stock} = 2 * 150,000 = \text{Rs.}300,000$$

$$\text{Less: Excess of closing stock} = \underline{\text{Rs. } 10,000}$$

$$2 \text{ opening stock} = \underline{\text{Rs.}290,000}$$

$$\text{Opening Stock} = \frac{2,90,000}{2} = \text{Rs.}1,45,000$$

$$(c) \text{ Closing Stock} = \text{Opening stock} + 10,000 = 1,45,000 + 10,000 = \text{Rs. } 1,55,000$$

$$\text{Creditors Velocity} = \frac{\text{Sundry creditors} + \text{B/P}}{\text{Purchases}} \times 12$$

$$\text{Cost of goods sold} = \text{Opening stock} + \text{Purchases} - \text{Closing stock}$$

$$12,00,000 = 1,45,000 + \text{Purchases} - 1,55,000$$

$$12,00,000 - 1,45,000 + 1,55,000 = \text{Purchases}$$

$$\text{Purchases} = \text{Rs. } 12,10,000$$

$$\text{Creditors Velocity} = 2 = \frac{\text{Sundry creditors}}{12,10,000} \times 12$$

$$2 * 12,10,000 = \text{Sundry creditors} * 12$$

$$(b) \text{ Sundry Creditors} = \frac{2 \times 12,10,000}{12} = \text{Rs.}201,667$$

Calculation of Financial Statements from given ratios

For convenience and easy comprehension, this has been taken up under four models:

Models:

- (a) Construction of Trading Account from given ratios.
- (b) Construction of Trading A/c and P&LA/c from given ratios.
- (c) Construction of Balance Sheet from given ratios.
- (d) Construction of Trading and P&LA/c and Balance Sheet from given ratios.

**NOTES****(a) Construction of Trading Account from given ratios****Illustration 17:**

*Prepare a Trading Account from the following data:*

*Closing stock is Rs.2000 above opening stock*

*Sales is Rs.3, 20,000*

*Gross profit is 25% on sales*

*Stock turnover ratio is 8 times.*

**Solution:**

$$\begin{aligned} \text{Gross profit} &= 25\% \text{ on sales} \\ &= 25\% \text{ on Rs.3, 20,000} \\ &= \frac{25}{100} \times 3,20,000 \end{aligned}$$

**Gross Profit = Rs. 80,000**

$$\begin{aligned} \text{Cost of goods sold} &= \text{Sales} - \text{Gross profit} \\ &= \text{Rs. 3, 20,000} - \text{Rs. 80,000} \\ &= \text{Rs. 2, 40,000} \end{aligned}$$

$$\begin{aligned} \text{Stock turnover ratio} &= \frac{\text{Cost of goods sold}}{\text{Average Inventory}} \\ 8 &= \frac{2,40,000}{\text{Average Inventory}} \end{aligned}$$

$$\text{Average Inventory} = \text{Rs. 2, 40,000} / 8 = \text{Rs. 30,000}$$

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

Let opening stock be X

Then, Closing stock is (X + 2000)

[i. e. Closing stock is Rs.2000 above opening stock]

Average inventory is Rs. 30,000

Thus,

$$30,000 = \frac{x + (x + 2,000)}{2}$$

$$60,000 = 2X + 2000$$

$$2X = 58,000; X = 29,000.$$

**Hence, opening stock is Rs. 29,000.**

Closing stock = Rs. 29,000 + Rs. 2000

**Closing stock = Rs. 31,000**

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

$$2,40,000 = 29,000 + \text{Purchases} - 31,000$$

**Purchases = 2,42,000**

Trading Account

Particulars	Rs.	Particulars	Rs.
To Opening stock	29,000	By Sales	3,20,000
To Purchases	2,42,000	By Closing stock	31,000
To Gross profit	80,000		
	3,51,000		3,51,000

**(b) Construction of Trading and Profit and Loss from given ratios**

**Illustration 18:**

*From the following particulars relating to Ahamed & Co., Prepare the Trading and Profit and Loss Account for the year ending 31.12.2007.*

<i>Fixed Assets / Turnover Ratio</i>	<i>1:2</i>
<i>Gross profit ratio</i>	<i>25%</i>
<i>Net profit ratio</i>	<i>15%</i>
<i>Consumption of Raw Materials</i>	<i>40% of cost</i>
<i>Finished goods</i>	<i>20% of the cost</i>
<i>Value of fixed assets</i>	<i>Rs. 10,50,000</i>

*There is no opening and closing stock.*

**NOTES****Solution:****(i) Calculation of Sales:**

$$\frac{\text{Fixed Assets}}{\text{Turnover(Sales)}} = \frac{1}{2} \text{ (given)}$$

$$\frac{10,50,000}{\text{Sales}} = \frac{1}{2}$$

$$2 * 10, 50,000 = 1 * \text{Sales}$$

$$\text{Sales} = \text{Rs. 21, 00,000}$$

**(ii) Calculation of Gross Profit:**

$$\begin{aligned} \text{Gross profit} &= \text{Sales} \times \frac{25}{100} \\ &= 21,00,000 \times \frac{25}{100} \end{aligned}$$

$$\text{Gross profit} = \text{Rs. 5, 25,000}$$

**(iii) Calculation of Net Profit:**

$$\begin{aligned} \text{Net Profit} &= \text{Sales} \times \frac{15}{100} \\ &= 21,00,000 \times \frac{15}{100} \end{aligned}$$

$$\text{Net profit} = \text{Rs. 3, 15,000}$$

**(iv) Calculation of Indirect expenses:**

$$\begin{aligned} \text{Indirect Expenses} &= \text{Gross profit} - \text{Net profit} \\ &= 5, 25,000 - 3, 15,000 \\ &= \text{Rs. 2, 10,000} \end{aligned}$$

**(v) Calculation of material consumed:**

$$\text{Cost of goods sold} = \text{Sales} - \text{GP} = 21, 00,000 - 5, 25,000 = \text{Rs. 15,75,000}$$

$$\text{Material consumed} = 15, 75,000 * (40/100) = \text{Rs. 6, 30,000}$$

**(vi) Calculation of other direct expenses:**

$$\text{Direct Expenses} = 100\% - 40\% = 60\% \text{ of cost of goods sold}$$

$$15, 75,000 * (60/100) = \text{Rs. 9, 45,000}$$

Trading and Profit and Loss A/c of Ahamed &amp; Co.,

**NOTES**

Particulars	Rs.	Particulars	Rs.
To Material consumed	6,30,000	By Sales	21,00,000
To Direct Expenses	9,45,000		
To Gross Profit	5,25,000		
	21,00,000		21,00,000
To Indirect Expenses	2,10,000	By Gross profit	5,25,000
To Net profit	3,15,000		
	5,25,000		5,25,000

**(c) Construction of Balance Sheet from given ratios****Illustration 19:**

*From the following information prepare a Balance Sheet.*

*Working capital* Rs. 75,000

*Reserves and Surplus* Rs.1,00,000

*Bank Overdraft* Rs.60,000

*Current ratio* 1.75

*Liquid ratio* 1.15

*Fixed assets to Proprietor's Fund* 0.75

*Long term liabilities* Nil

**Solution:****(i) Calculation of Current Assets and Current Liabilities:**

Current ratio = 1.75 (given)

$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}} \times \frac{1.75}{1}$$

Let current liabilities be X, then current assets will be 1.75X.

Working capital = Current assets – Current liabilities

$$75,000 = 1.75 X - 1.0X$$

$$75,000 = 0.75 X$$

$$X = 75,000/0.75 = \text{Rs. } 1,00,000 = \text{Current liabilities}$$

$$\text{Current assets} = 1.75 X = 1.75 * 1,00,000 = \text{Rs. } 1,75,000$$

**NOTES****(ii) Calculation of Stock, Liquid Assets and Liquid Liabilities:**

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

$$\text{Liquid liabilities} = \text{Current liabilities} - \text{Bank O/D}$$

$$= 1,00,000 - 60,000 = \text{Rs. } 40,000$$

$$\text{Liquid Ratio} = 1.15 = \text{Liquid assets} / 40,000$$

$$\text{Liquid assets} = 1.15 * 40,000 = \text{Rs. } 46,000$$

$$\text{Liquid assets} = \text{Current assets} - \text{Stock}$$

$$46,000 = 1,75,000 - \text{Stock}$$

$$\text{Stock} = 1,75,000 - 46,000 = \text{Rs. } 1,29,000$$

**(iii) Calculation of Proprietary fund and Fixed Assets:**

$$\text{Fixed assets to Proprietor's Fund} = \text{Fixed Assets} / \text{Proprietor's Fund} = 0.75 / 1$$

Let proprietary fund be X, then fixed assets will be 0.75X

$$\text{Proprietary Fund} + \text{Current liabilities} = \text{Current assets} + \text{Fixed assets}$$

$$1.0X + 10,000 = 1,75,000 + 0.75X$$

$$1.0X - 0.75X = 1,75,000 - 1,00,000$$

$$0.25X = 75,000$$

$$X = 75,000 / 0.25 = \text{Rs. } 3,00,000$$

$$\text{Fixed assets} = 0.75X = 0.75 * 3,00,000 = \text{Rs. } 2,25,000$$

**(iv) Calculation of Share Capital:**

$$\text{Eq. Capital} = \text{Proprietor's Fund} - \text{Reserves \& Surplus}$$

$$= 3,00,000 - 1,00,000 = \text{Rs. } 2,00,000$$

## Balance Sheet

**NOTES**

Liabilities	Rs.	Assets	Rs.
Eq. Share capital	2,00,000	Fixed Assets	2,25,000
Reserves & Surplus	1,00,000	Stock	1,29,000
Liquid liabilities	40,000	Liquid Assets	46,000
Bank O/D	60,000		
	4,00,000		4,00,000

**(d) Construction of Trading and Profit and Loss account and Balance Sheet from given ratios****Illustration 20:**

From the following information, you are required to prepare Trading and P & L a/c and Balance Sheet:

<i>Net Current Assets</i>	<i>Rs. 1, 00,000</i>
<i>Paid up Capital</i>	<i>Rs. 3, 00,000</i>
<i>Current Ratio</i>	<i>1.8 : 1</i>
<i>Liquid Ratio</i>	<i>1.3 : 1</i>
<i>Fixed Assets to Shareholder's equity</i>	<i>80%</i>
<i>Gross profit Ratio</i>	<i>25%</i>
<i>Net profit to paidup capital</i>	<i>20%</i>
<i>Stock Turnover</i>	<i>5</i>
<i>Debt collection period</i>	<i>36.5 days</i>

**Solution:****(i) Calculation of current assets and current liabilities:**

$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}} \times \frac{1.8}{1} \text{ (given)}$$

Let current liabilities be X, current assets will be 1.8X

Working capital (Net current assets) = Current Assets – Current Liabilities

$$1, 00,000 = 1.8X - 1.0X$$

$$1, 00,000 = 0.8X$$

$$X = 1, 00,000/0.8 = \text{Rs. } 1, 25,000 = \text{Current liabilities}$$

$$\text{Current Assets} = 1.8X = 1.8 * 1, 25,000 = \text{Rs. } 2, 25,000$$

**NOTES****(ii) Calculation of Liquid Assets**

Liquid Ratio = 1.35 : 1 (given)

$$\text{Liquid Ratio} = \frac{\text{Liquid Assets}}{\text{Current Liabilities} - \text{Bank O/D}}$$

$$1.35 = \frac{\text{Liquid Assets}}{1,25,000 - \text{Bank O/D}}$$

Liquid Assets = 1.35 \* 1,25,000 = Rs. 1,68,750

**(iii) Calculation of Closing Stock**

Liquid Asset = Current Assets – Closing Stock

1,68,750 = 2,25,000 – Stock

Stock = 2,25,000 – 1,68,750 = Rs. 56,250

**(iv) Calculation of Cost of goods sold**

$$\text{Stock Turnover Ratio} = \frac{\text{Cost of goods sold}}{\text{Closing Stock}}$$

$$5 = \frac{\text{Cost of goods sold}}{56,250}$$

Cost of goods sold = 5 \* 56,250 = Rs. 2,81,250

**(v) Calculation of Sales**

Gross Profit Ratio = 25%

Cost of goods sold = Sales – G.Profit

75% = 100% - 25%

Cost of goods sold = 75% = 2,81,250

Sales = (2,81,250/75) \* 100 = Rs. 3,75,000

(Likewise) Gross profit = (2,81,250/2) \* 25 = Rs. 93,750

**(vi) Calculation of Debtors**

$$\text{Debt Collection Period} = \frac{\text{Debtors}}{\text{Credit Sales}} * 365$$

$$36.5 = \frac{\text{Debtors}}{3,75,000} \times 365$$

$$36.5 \times 3,75,000 = \text{Debtors} \times 365$$

$$\frac{3.65 \times 3,75,00}{365} = \text{Debtors}$$

$$\text{Debtors} = \text{Rs. } 37,500$$

**(vii) Calculation of Net Profit**

$$\text{Net Profit to paid up capital} = 20\%$$

$$\text{Paid up capital} = 3,00,000$$

$$\text{Net Profit} = 3,00,000 \times (20/100) = \text{Rs. } 60,000$$

**(viii) Calculation of Bank**

$$\text{Cash} = \text{Liquid Assets} - \text{Debtors}$$

$$= 1,68,750 - 37,500 = \text{Rs. } 1,31,250$$

**(ix) Calculation of Fixed Assets**

$$\text{Fixed Assets to Shareholder Equity} = \text{FA/SE} = 80/100$$

$$\text{Let Shareholder equity be } 100X; \text{ Fixed Assets will be } 80X$$

$$\text{Shareholder Equity} + \text{Current Liabilities} = \text{Fixed Assets} + \text{Current Assets}$$

$$100X + 1,25,000 = 80X + 2,25,000$$

$$100X - 80X = 2,25,000 - 1,25,000$$

$$20X = 1,00,000$$

$$X = 1,00,000 / 20 = \text{Rs. } 5,000$$

$$\text{Shareholder's Equity} = 100X = 100 \times 5000 = \text{Rs. } 5,00,000$$

$$\text{Fixed Assets} = 80X = 80 \times 5000 = \text{Rs. } 4,00,000$$

**(x) Calculation of Reserves & Surplus**

$$\text{Reserves & Surplus} = \text{Shareholder's Fund} - \text{Equity Capital}$$

$$= 5,00,000 - 3,00,000 = \text{Rs. } 2,00,000$$

**NOTES****(xi) Calculation of Operating expenses**

Operating expenses = Gross Profit – Net Profit

$$= 93,750 - 60,000 = \text{Rs. } 33,750$$

Dr. Trading and Profit and Loss Account Cr.

Particulars	Rs.	Particulars	Rs.
To Cost of goods sold	2,81,250	By Sales	3,75,000
To Gross Profit c/d	93,750		
	3,75,000		3,75,000
To Operating expenses	33,750	By Gross profit b/d	93,750
To Net Profit	60,000		
	93,750		93,750

**Balance Sheet**

Liabilities	Rs.	Assets	Rs.
E.Share capital	3,00,000	Fixed Assets	4,00,000
Reserves & Surplus		Stock	56,250
Op.balance 1,40,000		Debtors	37,500
(+) This year Profit 60,000		Cash & Bank	1,31,250
	2,00,000		
Current liabilities	1,25,000		
	6,25,000		6,25,000

**Note:** Op.Stock and Clo.Stock has been adjusted in cost of goods sold. Hence, it is not necessary to show these a/c's in the Trading A/c.

**1.2.25 Fund Flow Statement****Meaning of Fund Flow Statement**

The term "Funds" has three different meanings. In a narrow sense, it means cash only. In a broad sense, the term fund refers to all financial resources. In another sense, fund refers to "Working Capital", which is the excess of Current Assets over Current Liabilities. In Fund Flow Statement, the word "Fund" means "Working Capital".

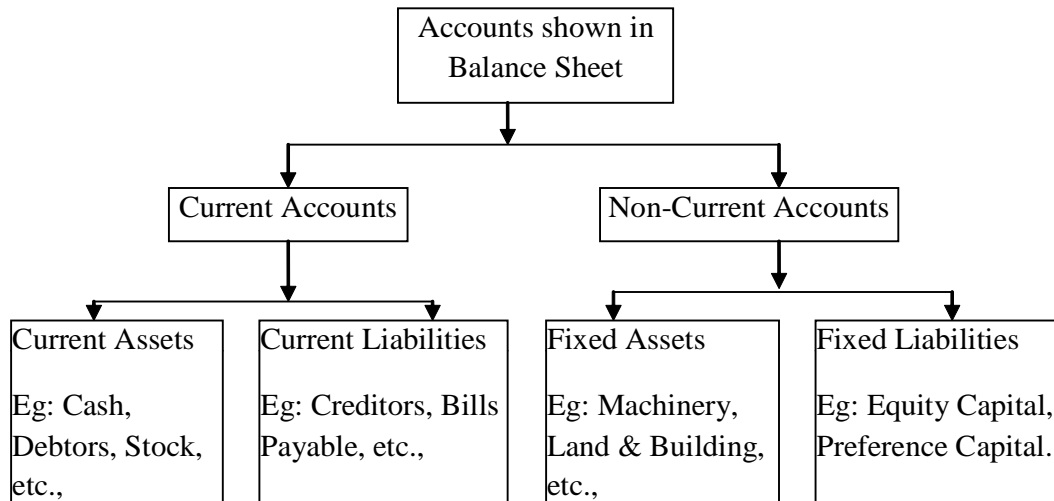
The term "flow" signifies "change".

A Fund Flow Statement highlights the changes in working capital during a period. It is popularly known as "Statement of Sources and Application of Funds". If a transaction results in increase in working capital, it is called sources of funds. If a transaction decreases working capital, it is construed as "application of funds". If it does not affect working

capital, there is no flow of funds. Thus, a Fund Flow Statement shows how funds were obtained and used during a given period.

### Current Accounts and Non-Current Accounts

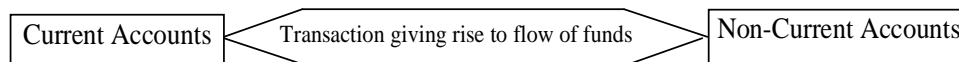
To facilitate fund flow analysis, accounts shown in Balance Sheet can be classified as shown below:



Flow of fund or working capital occurs only when a transaction involves one current account and one non-current account [for instance, purchase of machinery (non-current account) for cash (current account)].

Transaction between two current accounts [for example, cash paid to creditors] or two non-current accounts [like, issue of shares as consideration for purchase of building], does not result in flow of funds.

Thus, flow of funds can be diagrammatically represented as follows:



Transaction taking place between Current Accounts and Non-Current Accounts only will generate funds.

### 1.2.26 Steps involved in the Preparation of Fund Flow Statement

The various steps involved in the preparation of Fund Flow Statement are given below:

- 1) Preparation of Schedule of changes in Working Capital.
- 2) Opening of accounts for non-current items.
- 3) Preparation of Adjusted Profit and Loss account.
- 4) Preparation of Fund Flow Statement.

The above steps are explained below in detail.

**NOTES****1) Preparation of Schedule of changes in Working Capital:**

As stated earlier, working capital is the difference between current assets and current liabilities. This schedule is prepared to find out the net increase or decrease in working capital during an accounting period.

Prepare a statement in the following form:

**Schedule of changes in Working Capital**

Particulars	Previous Year Rs.	Current Year Rs.	Effect on Working Capital	
			Increase Rs.	Decrease Rs.
Current Assets:				
Cash	Xxx	Xxx	Xxx	
Bank	Xxx	Xxx	Xxx	
Bills Receivable	Xxx	Xxx		Xxx
Debtors	Xxx	Xxx		Xxx
C.A.	Xxx	Xxx		
Current Liabilities:				
Bills Payable	Xxx	Xxx	Xxx	
Creditors	Xxx	Xxx		Xxx
Bank Overdraft	Xxx	Xxx	Xxx	
C.L.	Xxx	Xxx		
Net Working Capital (CA-CL)	Xxx	Xxx		
Net Increase or Decrease	Increase	Decrease	Decrease	Increase
Total	Xxx	Xxx	Xxx	xxx

Following are the rules for preparing the schedule

Particulars	Impact on Working Capital	
	(i) Increase in Current asset during current year	Increase
(ii) Decrease in Current asset during current year	-	Decrease
(iii) Increase in Current liabilities during current year	-	Increase
(iv) Decrease in Current liabilities during current year	Increase	-

**Note:**

- i) If the total of “increases” exceed the total of “decreases”, it is “net increase in working capital” and vice versa.
- ii) “Net increase in working capital” will be shown on the “Application” side of Fund Flow Statement. In case of “Net decrease in working capital”, it will be shown on the “Sources” side of Fund Flow Statement.
- iii) Those items of current assets and current liabilities which are entered in the above schedule, will not appear in any other accounts or statement.

**2) Opening of accounts for non-current items**

These are prepared, wherever warranted, to ascertain the sources or application of funds. While preparing, additional information, if any, regarding such accounts should also be considered.

For instance, if opening and closing value of a machine given in balance sheet are Rs. 1, 00,000 and Rs. 1, 25, 000, and as additional information, it is given that depreciation charged during the year is Rs. 25, 000, the Machine account will appear as follows:

Dr		Machine A/c		Cr	
Particulars	Amount Rs.	Particulars	Amount Rs.	Particulars	Amount Rs.
To bal b/d	1,00,000	By Depreciation	25,000		
To Cash [Purchase of machine]	50,000	By bal c/d	1,25,000		
	1,50,000		1,50,000		

The balancing figure of Rs. 50,000 represents purchase of machine involving outflow or application of funds.

# NOTES

# NOTES

## 3) Preparation of Adjusted Profit and Loss A/c

This is opened to ascertain “Funds from operation” or “Funds lost in operation”.

A fund from operation is the only internal source of funds. The net profit, earned by the business is known as the internal source. But such net profit shown by Profit and Loss A/c should be adjusted for Non-fund and Non-operating items.

Non-fund items are those income and expenses charged to Profit and Loss A/c that does not involve any outflow of fund [examples: writing back of Provision for tax, Depreciation, Transfer to General Reserve, etc.]

Non-operating items are those income and expenses charged to Profit and Loss A/c which are not directly related to business operations of the company. [examples: Refund of tax, profit on sale of asset, Dividend received, Loss on sale of asset, etc.]

The balancing figure in the Adjusted Profit and Loss A/c is either, “Funds from operation” or “Funds lost in operation”.

Following is the specimen of Adjusted Profit and Loss A/c:

Dr	Adjusted Profit and Loss A/c		Cr
Particulars	Amount Rs.	Particulars	Amount Rs.
To Depreciation	Xxx	By Net Profit of last year	Xxx
To Goodwill, Patent, Preliminary expenses written off	Xxx	By writing back of excess provision	Xxx
To Transfer to reserves	Xxx	By Refund of income tax	Xxx
To interim dividend paid	Xxx	By Appreciation in the value of fixed asset	Xxx
To Proposed Dividend (if taken as non-current item)	Xxx	By Dividend received	Xxx
To Provision for tax (if taken as non-current item)	Xxx	By profit on sale of asset	Xxx
To Loss on sale of asset	Xxx	By Funds from operation	Xxx *
To Net profit of current year	Xxx		
To funds lost in operation	Xxx *		
	Xxx		xxx

\* Either of the two will appear.

**Note**

- i) Funds from operation will be shown as “Sources” in the Fund Flow Statement.
- ii) Funds lost in operation will be shown as “Application” in the Fund Flow Statement.

**4) Preparation of Fund Flow Statement**

This is prepared by incorporating sources of funds on one side, and application of funds on another along with the data generated in the above three steps.

Following is the specimen of Fund Flow Statement:

Fund Flow Statement for the Period \_\_\_\_\_

Sources of Funds	Amount Rs.	Application of Funds	Amount Rs.
Funds from operation	Xxx (1)	Funds lost in operation	Xxx (1)
Issue of shares/debentures	Xxx	Redemption of Preference shares, Debentures	Xxx
Sale of fixed asset/investment	Xxx	Purchase of fixed asset/investment	Xxx
Long term loans taken	Xxx	Repayment of long term loans	Xxx
Decrease in Working Capital	Xxx (2)	Payment of tax	Xxx
		Payment of dividend	Xxx
		Increase in Working Capital	Xxx (2)
	Xxx		xxx

(1) : Either of the two will appear (2) : Either of the two will appear

**1.2.27 Difference between Fund Flow Statement and Balance Sheet**

They can be distinguished on the following lines:

**NOTES**

# NOTES

<b>Fund Flow Statement</b>	<b>Balance Sheet</b>
It shows the changes in financial between two dates	It shows the financial position as on a particular date
It is a post balance sheet exercise	It is the end-result of accounting operations.
No such legal obligation to prepare Fund Flow Statement	Companies Act makes preparation of Balance Sheet obligatory
It is a statement of changes in assets and liabilities	It is a statement of assets and liabilities
It helps management in financial analysis and in decision making	Analysis of Balance Sheet reveals the soundness or otherwise of a firm
This is no such prescribed form for Fund Flow Statement	Company Balance Sheet should be prepared in the specified format
Headings used are “Source of Funds” and “Application of Funds”	Heading used are “Assets” and “Liabilities”

## 1.2.28 Importance or uses of Fund Flow Statement

- 1) It shows how and from what sources funds were raised and they were used.
- 2) It shows the consequences of business operations, thus enabling management to take remedial measures.
- 3) It depicts the reasons for changes in working capital.
- 4) It helps in working capital management.
- 5) Sources of funds reveal how the firm has funded its development projects in the past, whether and to what extent from internal and external sources.
- 6) Analysis of “Application of funds” reveals how the resources were used in the past. This can act as a guide while planning future funds deployment.
- 7) It gives a general idea about the overall financial management of the business.
- 8) Acts as a guideline for efficient use of scarce resources.
- 9) Helps banks and financial institutions to assess the credit worthiness and repaying capacity of the firm.
- 10) Aids management in formulating financial policies in areas like dividend declaration, creating reserves, etc.

## 1.2.29 Limitations of Fund Flow Statement

- 1) It is not original in nature and is only a re-arrangement of data given in financial statements.

- 2) When both aspects of a transaction involve current account, they are ignored in this statement.
- 3) When both aspects of a transaction involve non-current account, they are not considered in this statement.
- 4) It depicts the past position and not the future.
- 5) It is not a ideal tool for financial analysis.
- 6) Changes in cash position are more important than working capital.

### 1.2.30 Trifurcation of problem models in Fund Flow Statements

For easy comprehension, a problem model in Fund Flow Statement has been classified as:

- Calculation of changes in working capital
- Calculation of Funds from operations
- Preparation of Fund Flow statement

#### Calculation of changes in working capital

This model involves preparation of schedule of changes in working capital. While doing so, the following points should be kept in mind:

- a. When Tax Payable (or Provision for Taxation) and Dividend Payable (or Proposed Dividend) are given as Liabilities ONLY or specifically given as current liabilities, then they should be treated as current liabilities and shown in schedule of changes in working capital.
- b. When the above are given as liabilities along with some adjustments in the form of additional information, then they should then be treated as non-current items and adjusted in “Adjusted Profit and Loss A/c” and “Fund Flow Statement”.
- c. If “Investment” is specifically given as Current Assets, it is shown in Schedule of Changes in Working Capital only. If they are given as long-term or nothing is specified, it is treated as non-current item and is shown in Fund Flow Statement.

#### Illustration 21:

From the following Balance Sheet prepare a schedule of changes in working capital.

<i>Liabilities</i>	<i>2003 Rs.</i>	<i>2004 Rs.</i>	<i>Assets</i>	<i>2003 Rs.</i>	<i>2004 Rs.</i>
<i>Share capital</i>	<i>3,00,000</i>	<i>3,75,000</i>	<i>Machinery</i>	<i>70,000</i>	<i>1,00,000</i>
<i>Creditors</i>	<i>1,06,000</i>	<i>70,000</i>	<i>Stock in Trade</i>	<i>1,21,000</i>	<i>1,36,000</i>
<i>Profit &amp; Loss A/c</i>	<i>14,000</i>	<i>31,000</i>	<i>Debtors</i>	<i>1,81,000</i>	<i>1,70,000</i>
			<i>Cash</i>	<i>48,000</i>	<i>70,000</i>
	<i>4,20,000</i>	<i>4,76,000</i>		<i>4,20,000</i>	<i>4,76,000</i>

**NOTES****Solution:****STATEMENT OF CHANGES IN WORKING CAPITAL**

Particulars	2003 Rs.	2004 Rs.	Effects on Working Capital	
			Increase	Decrease
Current Assets:				
Stock-in-Trade	1,21,000	1,36,000	15,000	-
Debtors	1,81,000	1,70,000	-	11,000
Cash	48,000	70,000	22,000	-
CA	3,50,000	3,76,000		
Current Liabilities:				
Creditors	1,06,000	70,000	36,000	-
CL	1,06,000	70,000		
Net working capital(CA-CL)	2,44,000	3,06,000	73,000	11,000
Net Increase in working capital	62,000	-	-	62,000
	3,06,000	3,06,000	73,000	73,000

**Illustration 22:** Prepare a Statement of changes in Working Capital from the following Balance Sheets of Ram Seth Company:

**BALANCE SHEET as on 31<sup>st</sup> December**

Liabilities	2003 Rs.	2004 Rs.	Assets	2003 Rs.	2004 Rs.
Equity capital	5,00,000	5,00,000	Fixed Assets	6,00,000	7,00,000
Debentures	3,70,000	4,50,000	Long-term Investments	2,00,000	1,00,000
Tax Payable	77,000	43,000	Work-in-progress	80,000	90,000
Creditors	96,000	1,92,000	Stocks	1,50,000	2,25,000
Interest Payable	37,000	45,000	Debtors	70,000	1,40,000
Dividend Payable	50,000	35,000	Cash	30,000	10,000
	11,30,000	12,65,000		11,30,000	12,65,000

**Solution:****NOTES****STATEMENT OF CHANGES IN WORKING CAPITAL**

Particulars	2003	2004	Effect on Working Capital	
			Increase (+)	Decrease (-)
<b>Current Assets:</b>				
Cash	30,000	10,000	-	20,000
Debtors	70,000	1,40,000	70,000	-
Stocks	1,50,000	2,25,000	75,000	-
Work-in-progress	80,000	90,000	10,000	-
CA	3,30,000	4,65,000		

<b>Current Liabilities:</b>				
Tax Payable	77,000	43,000	34,000	-
Creditors	96,000	1,92,000	-	96,000
Interest Payable	37,000	45,000	-	8,000
Dividend Payable	50,000	35,000	15,000	-
CL	2,60,000	3,15,000		
Working Capital (CA – CL)	70,000	1,50,000		
Net Increase in Working Capital	80,000	-	-	80,000
	<b>1,50,000</b>	<b>1,50,000</b>	<b>2,40,000</b>	<b>2,04,000</b>

**Calculation of Funds from Operations****Illustration 23:**

*From the following Income Statement ascertain the amount of funds from operations:*

**NOTES**

Dr		PROFIT AND LOSS ACCOUNT		Cr	
<i>Particulars</i>	<i>Rs.</i>	<i>Particulars</i>	<i>Rs.</i>		
<i>To Salaries</i>	<i>10,000</i>	<i>By Gross Income</i>	<i>45,000</i>		
<i>To Rent</i>	<i>6,000</i>	<i>By Profit on sale of Furniture</i>	<i>1,000</i>		
<i>To Reserve for Doubtful debts</i>	<i>4,000</i>	<i>By Dividend</i>	<i>4,000</i>		
<i>To Interest and Comm.</i>	<i>5,000</i>				
<i>To Provision for depreciation</i>	<i>6,000</i>				
<i>To Provision for Taxation</i>	<i>8,000</i>				
<i>To Loss on Sale of Plant</i>	<i>2,000</i>				
<i>To Discount on issue of shares</i>	<i>1,000</i>				
<i>To Net Income</i>	<i>8,000</i>				
	<i>50,000</i>				<i>50,000</i>

**Solution:**

**CALCULATION OF FUNDS FROM OPERATIONS  
ADJUSTED PROFIT AND LOSS ACCOUNT**

Dr		Cr	
<b>Particulars</b>	<b>Rs.</b>	<b>Particulars</b>	<b>Rs.</b>
To Reserve for Doubtful debts	4,000	By Profit on sale of furniture	1,000
To Provision for Depreciation	6,000	By Dividend	4,000
To Provision for Taxation	8,000	By Funds from operation	24,000
To Loss on sale of plant	2,000		
To Discount on issue of shares	1,000		
To Net Profit	8,000		
	29,000		29,000

**Illustration 24:**

From the following details, calculate funds from operations.

<i>Particulars</i>	<i>Rs.</i>	<i>Particulars</i>	<i>Rs.</i>
Salaries	5,000	Discount of issue of debentures	2,000
Rent	3,000	Provision for bad debts	1,000
Refund of tax	3,000	Transfer to general reserve	1,000
Profit on sale of building	5,000	Preliminary expenses written off	3,000
Depreciation on plant	5,000	Goodwill written off	2,000
Provision for tax	4,000	Proposed dividend	6,000
Loss on sale of plant	2,000	Dividend received	5,000
Closing balance of Profit & Loss A/c	60,000		
Opening balance of Profit & Loss A/c	25,000		

**Solution:**

## CALCULATION OF FUNDS FROM OPERATIONS

Dr Adjusted Profit & Loss Account Cr.

<b>Particulars</b>	<b>Rs.</b>	<b>Particulars</b>	<b>Rs.</b>
To Depreciation on plant	5,000	By Opening balance	25,000
To Provision for tax	4,000	By Profit on sale of building	5,000
To Loss on sale of plant	2,000	By Refund of tax	3,000
To Discount on issue of debentures	2,000	By Dividend received	5,000
To Provision for Bad debts	1,000	By Funds from Operation(Bal.Fig)	48,000
To Transfer to general reserve	1,000		
To Prelim. Exp written off	3,000		
To Goodwill written off	2,000		
To Proposed dividend	6,000		
To Closing balance	60,000		
	86,000		86,000

**NOTES**

# NOTES

## 3.6.3 Preparation of Fund Flow Statement – Comprehensive Problems

**Illustration 25:** From the following Balance Sheets prepare fund flow statement  
(Values in Rs)

Liabilities	31 <sup>st</sup> Dec.		Assets	31 <sup>st</sup> Dec.	
	2003	2004		2003	2004
Share Capital	3,00,000	4,00,000	Machinery	50,000	60,000
Creditors	1,00,000	70,000	Furniture	10,000	15,000
Profit & Loss a/c	15,000	30,000	Stock-in-trade	85,000	1,05,000
			Debtors	1,60,000	1,50,000
			Cash	1,10,000	1,70,000
	4,15,000	5,00,000		4,15,000	5,00,000

**Solution:**

### SCHEDULE OF CHANGES IN WORKING CAPITAL

Particulars	31.12.03 Rs.	31.12.04 Rs.	Effects on Working Capital	
			Increase	Decrease
<b>Current Assets:</b>				
Stock-in-Trade	85,000	1,05,000	20,000	-
Debtors	1,60,000	1,50,000	-	10,000
Cash	1,10,000	1,70,000	60,000	-
CA	3,55,000	4,25,000		
<b>Current Liabilities:</b>				
Creditors	1,00,000	70,000	30,000	-
CL	1,00,000	70,000		
Net working capital (CA – CL)	2,55,000	3,55,000		
Net Increase in working cap.	1,00,000	-	-	1,00,000
	<b>3,55,000</b>	<b>3,55,000</b>	<b>1,10,000</b>	<b>1,10,000</b>

## FUND FLOW STATEMENT

Sources	Rs.	Application	Rs.
Issue of shares	1,00,000	Purchase of Machinery (Rs.60,000 – Rs.50,000)	10,000
Funds from operations (Rs. 30,000 – Rs. 15,000)	15,000	Purchase of Furniture (Rs.15,000 – Rs. 10,000)	5,000
		Net Increase in working capital	1,00,000
	1,15,000		1,15,000

## NOTES

**Note:** Non-operating items are not given. Hence, the difference between the P&L a/c treated as funds from operations.

**Illustration 26:** Balance Sheet of Balu Company are given below:

Liabilities	2004 Rs.	2005 Rs.	Assets	2004 Rs.	2005 Rs.
Share Capital	1,00,000	1,50,000	Land and Buildings	1,00,000	90,000
General Reserve	50,000	60,000	Machinery	1,00,000	1,19,000
Profit & Loss a/c	30,500	30,000	Stock	50,000	24,000
Bank Loan	70,000	-	Debtors	75,000	63,200
Sundry Creditors	50,000	37,200	Cash	2,500	16,000
Provision for tax	32,000	35,000	Goodwill	5,000	-
	3,32,500	3,12,200		3,32,500	3,12,200

During the year ended 31<sup>st</sup> December 2005

a) Dividend paid Rs.23,000

b) Depreciation written off: Machinery – Rs.14,000; Building – Rs.10,000

c) Income tax paid Rs. 28,000

Prepare the following statements

i) Statement of changes in working capital

ii) Fund flow statement

**NOTES****Solution:****STATEMENT OF CHANGES IN WORKING CAPITAL**

Particulars	2003 Rs.	2004 Rs.	Effects on Working Capital	
			Increase	Decrease
Current Assets:				
Stock-in-Trade	50,000	24,000	-	26,000
Debtors	75,000	63,200	-	11,800
Cash	2,500	16,000	13,500	-
CA	1,27,500	1,03,200		
Current Liabilities:				
S.Creditors	50,000	37,200	12,800	-
CL	50,000	37,200		
Net working capital (CA – CL)	77,500	66,000	26,300	37,800
Net Increase in working cap.		11,500	11,500	
	77,500	77,500	37,800	37,800

Dr Provision for Tax Account Cr

Particulars	Rs.	Particulars	Rs.
To Income tax paid	28,000	By Opening Balance b/d	32,000
To Closing Balance c/d	35,000	By Adj. Profit & Loss a/c (Bal.Fig)	31,000
	63,000		63,000

Dr Adjusted Profit And Loss A/C Cr

Particulars	Rs.	Particulars	Rs.
To Depreciation on Machinery	14,000	By Opening Balance b/d	30,500
To Depreciation on Land & Building	10,000	By Funds from operation (Bal.Fig)	92,500
To Provision for tax	31,000		
To Goodwill Written off	5,000		
To Dividend paid	23,000		
To General Reserve	10,000		
To Closing Balance c/d	30,000		
	1,23,000		1,23,000

**NOTES**

Dr		Machinery Account		Cr	
Particulars	Rs.	Particulars	Rs.		
To Opening Balance b/d	1,00,000	By Depreciation	14,000		
To Cash (Purchases) (Bal.Fig)	33,000	By Closing Balance c/d	1,19,000		
	1,33,000				1,33,000

Dr		Land and Building Account		Cr	
Particulars	Rs.	Particulars	Rs.		
To Opening Balance b/d	1,00,000	By Depreciation	10,000		
		By Closing Balance c/d	90,000		
	1,00,000				1,00,000

**FUND FLOW STATEMENT**

Sources	Rs.	Application	Rs.
Issue of share capital	50,000	Purchase of Machinery	33,000
Funds from operations	92,500	Repayment of Bank loan	70,000
Decrease in working capital	11,500	Income tax paid	28,000
		Dividend paid	23,000
	1,54,000		1,54,000

**Illustration 27:** From the following information relating to A Ltd., Prepare funds flow statement.

Liabilities	2003 Rs.	2004 Rs.	Assets	2003 Rs.	2004 Rs.
Share Capital	3,00,000	4,00,000	Cash	30,000	90,000
Reserve	1,00,000	50,000	Accounts Receivable	1,05,000	1,50,000
Retained Earnings (P&L a/c)	30,000	60,000	Inventories	1,50,000	1,95,000
Accounts Payable	45,000	1,35,000	Fixed Assets	1,90,000	2,10,000
	4,75,000	6,45,000		4,75,000	6,45,000

Additional information:

- The company issued bonus shares for Rs. 50,000 and for cash Rs. 50,000.
- Depreciation written off during the year Rs. 15,000.

**NOTES****Solution:** SCHEDULE OF CHANGES IN WORKING CAPITAL

Particulars	2003 Rs.	2004 Rs.	Effects on Working Capital	
			Increase	Decrease
<b>Current Assets:</b>				
Cash	30,000	90,000	60,000	-
Accounts Receivable	1,05,000	1,50,000	45,000	-
Inventories	1,50,000	1,95,000	45,000	-
CA	2,85,000	4,35,000		
Less: Current Liability:				
Accounts payable	45,000	1,35,000	-	90,000
CL	45,000	1,35,000		
Net working capital (CA-CL)	2,40,000	3,00,000	1,50,000	90,000
Net Increase in working cap.	60,000	-	-	90,000
	<b>3,00,000</b>	<b>3,00,000</b>	<b>1,50,000</b>	<b>1,50,000</b>

Dr

FIXED ASSETS A/C

Cr

Particulars	Rs.	Particulars	Rs.
To Opening Balance b/d	1,90,000	By Depreciation	15,000
To Cash (Purchases) (Bal.Fig)	35,000	By Closing Balance b/d	2,10,000
	2,25,000		2,25,000

Dr

SHARE CAPITAL ACCOUNT

Cr

Particulars	Rs.	Particulars	Rs.
		By Opening Balance b/d	3,00,000
		By cash (Issues)	50,000
To Closing Balance c/d	4,00,000	By General Reserves(Bonus Shares)	50,000
	4,00,000		4,00,000

Note: Bonus shares are issued out of General reserve.

Dr ADJUSTED PROFIT &amp; LOSS ACCOUNT Cr

Particulars	Rs.	Particulars	Rs.
To Depreciation on Fixed assets	15,000	By Opening Balance b/d	30,000
To Closing Balance c/d	60,000	By Fund from operation (Bal.Fig)	45,000
	75,000		75,000

**NOTES****FUND FLOW STATEMENT**

For the year ended 31-12-2004

Sources	Rs.	Application	Rs.
Issue of share	50,000	Purchase of Fixed Assets	35,000
Funds from operations	45,000	Increase in Working Capital	60,000
	95,000		95,000

**Illustration 28:***Balance Sheet of M/s. Black and White as on 2003 and 2004 were as follows.*

Liabilities	2003 Rs.	2004 Rs.	Assets	2003 Rs.	2004 Rs.
Creditors	40,000	44,000	Cash	10,000	7,000
Mrs. White'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

**NOTES**

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 2003 was Rs. 25,000 and on 2004 Rs. 40,000. Net profit for the year 2004 amounted to Rs. 45,000. You are required to prepare fund flow statement.

**Solution:****SCHEDULE OF CHANGES IN WORKING CAPITAL**

Particulars	2003 Rs.	2004 Rs.	Increase	Decrease
Current Assets:				
Cash	10,000	7,000	-	3,000
Debtors	30,000	50,000	20,000	-
Stock	35,000	25,000	-	10,000
CA	75,000	82,000		
Current Liability:				
Creditors	40,000	44,000	-	4,000
CL	40,000	44,000		
Net working capital (CA-CL)	35,000	38,000	20,000	17,000
Net Increase in working cap.	3,000	-	-	3,000
	38,000	38,000	20,000	20,000

Dr

**MACHINERY ACCOUNT (AT COST)**

Cr

Particulars	Rs.	Particulars	Rs.
To Opening Balance (Rs. 80,000 + 25,000) (Cost + Provision)	1,05,000	By Cash sales	5,000
		By Provision for Depre.	3,000
		By Adjusted P & L account (loss on sale)	2,000
		By Closing Balance (Rs.55,000 + 40,000)	95,000
	1,05,000		1,05,000

Dr PROVISION FOR DEPRECIATION ON MACHINERY A/C Cr

**NOTES**

Particulars	Rs.	Particulars	Rs.
To Machinery a/c (Dep. on sales)	3,000	By Opening Balance	25,000
To Closing Balance	40,000	By Adj. P & L A/c (Provided during the year) (Bal.Fig.)	18,000
	43,000		43,000

**CALCULATION OF DRAWINGS:**

Balance sheet of partnership firm is given. Hence, drawings is calculated from the opening and closing capital. Opening capital + Net Profit – Drawings = Closing capital

$$\text{Rs. } 1, 25,000 + \text{Rs. } 45,000 - \text{Drawings} = \text{Rs. } 1, 53,000$$

$$\text{Rs. } 1, 70,000 - \text{Drawings} = \text{Rs. } 1, 53,000$$

$$\text{Drawings} = \text{Rs. } 1, 70,000 - 1, 53,000 = \text{Rs. } 17,000.$$

	Rs.
Net Profit	45,000
Add: Non-operating expenses:	
Loss on sale of machinery	2,000
Depreciation provided during the year	18,000
Funds from operations	65,000

**FUND FLOW STATEMENT**

Sources	Rs.	Application	Rs.
Sale of machinery	5,000	Purchase of land	10,000
Loan from Bank	10,000	Purchase of building	25,000
Fund from operations(B/F)	65,000	Drawings	17,000
		Repayment of Mrs. White's Loan	25,000
		Increase in working capital	3,000
	80,000		80,000

**NOTES****Illustration 29:**

The following are the summarized balance sheets of a company, as at 31<sup>st</sup> March, 2005 and 2006.

31.03.2005

<i>Liabilities</i>	<i>Rs.</i>	<i>Assets</i>	<i>Rs.</i>
<i>Share capital</i>	4,50,000	<i>Fixed assets</i>	4,00,000
<i>General reserve</i>	3,00,000	<i>Investments</i>	50,000
<i>Profit and Loss a/c</i>	56,000	<i>Stock</i>	2,40,000
<i>Sundry creditors</i>	1,68,000	<i>Sundry debtors</i>	2,10,000
<i>Provision for taxation</i>	75,000	<i>Bank</i>	1,49,000
	10,49,000		10,49,000

31.03.2006

<i>Liabilities</i>	<i>Rs.</i>	<i>Assets</i>	<i>Rs.</i>
<i>Share capital</i>	4,50,000	<i>Fixed assets</i>	3,20,000
<i>General reserve</i>	3,10,000	<i>Investments</i>	60,000
<i>Profit and Loss a/c</i>	68,000	<i>Stock</i>	2,10,000
<i>Mortgage loan</i>	2,70,000	<i>Sundry debtors</i>	4,55,000
<i>Sundry creditors</i>	1,34,000	<i>Bank</i>	1,97,000
<i>Provision for taxation</i>	10,000		
	12,42,000		12,42,000

**Additional Information:**

1. Investments costing Rs. 8,000 were sold during the year for Rs. 8,500 and further investments were purchased during the year for Rs. 18,000
2. The net profit for the year was Rs. 62,000 after charging depreciation on fixed assets Rs. 70,000 and provision for taxation Rs. 10,000.
3. During the year part of fixed assets costing Rs. 10,000 was disposed for Rs. 12,000 and the profit is included in the profit and loss account.
4. Dividend paid during the year amounted to 40,000.

Prepare a statement of sources and application of funds for the year ended 31<sup>st</sup> March, 2006.

Solution:

**NOTES**

## SCHEDULE OF CHANGES IN WORKING CAPITAL

Particulars	31.03.2005 Rs.	31.03.2006 Rs.	Increase Rs.	Decrease Rs.
<b>Current assets:</b>				
Stock	2,40,000	2,10,000		30,000
Sundry debtors	2,10,000	4,55,000	2,45,000	-
Bank	1,49,000	1,97,000	48,000	-
	5,99,000	8,62,000		
Less: Current Liability:				
Sundry Creditors	1,68,000	1,34,000	34,000	
Working Capital	4,31,000	7,28,000	3,27,000	30,000
Increase in working capital	2,97,000	-	-	2,97,000
	<b>7,28,000</b>	<b>7,28,000</b>	<b>3,27,000</b>	<b>3,27,000</b>

## FUND FLOW STATEMENT

Sources	Rs.	Application	Rs.
Sale of fixed assets	12,000	Purchase of investments	18,000
Sale of investments	8,500	Payment of tax	75,000
Mortgage loan raised	2,70,000	Payment of dividend	40,000
Funds from operations	1,39,500	Increase in working capital	2,97,000
	4,30,000		4,30,000

Working:

## FIXED ASSETS ACCOUNT

	Rs.		Rs.
To balance b/d	4,00,000	By Adjusted profit & loss a/c (depreciation)	70,000
To Adjusted profit & loss a/c (profit on sale)	2,000	By cash(sale)	12,000
		By balance c/d	3,20,000
	4,02,000		4,02,000

**NOTES****INVESTMENT ACCOUNT**

	Rs.		Rs.
To balance b/d	50,000	By Cash (sale)	8,500
To Adjusted Profit and Loss a/c (Profit on sale)	500	By balance c/d	60,000
To Cash (Purchase)	18,000		
	68,500		68,500

**PROVISION FOR TAXATION ACCOUNT**

	Rs.		Rs.
To Cash (tax paid)	75,000	By balance b/d	75,000
To balance c/d	10,000	By Adjusted profit and loss a/c (current year's provision)	10,000
	85,000		85,000

**ADJUSTED PROFIT AND LOSS ACCOUNT**

	Rs.		Rs.
To Fixed assets (depreciation)	70,000	By balance c/d	56,000
To General reserve	10,000	By Fixed assets (profit on sale)	2,000
To Provision for tax	10,000	By Investments (profit on sale)	500
To dividend	40,000	By Funds from operation (Bal. Fig.)	1,39,500
To balance c/d	68,000		
	1,98,500		1,98,500

**NOTES****Illustration 30:**

From the following Balance Sheets, Prepare Sources and Application of Fund Statement and Working Capital changes:

Liabilities	2006 Rs.	2007 Rs.	Assets	2006 Rs.	2007 Rs.
Share capital	50,000	1,00,000	Goodwill	15,000	25,000
Debentures	-	25,000	Plant	18,000	96,000
Profit & Loss	15,000	25,000	Stock	40,000	35,000
Proposed dividend	5,000	6,000	Debtors	15,000	32,500
Sundry creditors	20,000	30,000	Cash	8,000	9,000
Liabilities for Exp.	5,000	3,500	Preliminary exp.	4,000	2,500
Overdraft	5,000	10,500			
	1,00,000	2,00,000		1,00,000	2,00,000

A business was purchased during the year by issue of Rs. 25,000 shares and Rs. 25,000 debentures. Depreciation Rs. 6,000 has been provided in the year. A machine has been sold for Rs. 1,500 W.D.V. being Rs. 1,000. The business purchased had the following assets and liabilities:

Machines Rs. 20,000, Stock Rs. 5,000, Debtors Rs. 15,000, Creditors Rs. 5,000.

**Solution: SCHEDULE OF CHANGES IN WORKING CAPITAL**

Particulars	2006 Rs.	2007 Rs.	Effects on Working Capital	
			Increase	Decrease
Current Assets:				
Stock	40,000	35,000	-	5,000
Debtors	15,000	32,500	17,500	-
Cash	8,000	9,000	1,000	-
CA	63,000	76,500		
Current Liabilities:				
Creditors	20,000	30,000	-	10,000
Liab. For expenses	5,000	3,500	1,500	-
Overdraft	5,000	10,500	-	5,500
CL	30,000	44,000		
Net working capital (CA – CL)	33,000	32,500	20,000	20,500
Net Increase in working cap.	-	500	500	-
	<b>33,000</b>	<b>33,000</b>	<b>20,500</b>	<b>20,500</b>

**NOTES**

Dr.		PLANT ACCOUNT		Cr.	
		Rs.			Rs.
To Balance b/d		18,000	By Bank		1,500
To P&L a/c –profit on Sale of machine		500	By Depreciation		6,000
To Share capital – Purchase		20,000	By balance c/d		96,000
To Cash – Purchase (Bal. Fig.)		65,000			
		1,03,500			1,03,500

Dr.		ADJUSTED PROFIT & LOSS ACCOUNT		Cr.	
		Rs.			Rs.
To Preliminary expenses		1,500	By Opening balance b/d		15,000
To Goodwill written off		5,000	By profit on sale of plant		500
To Depreciation – plant		6,000	By Funds from operation		28,000
To Proposed Dividend		6,000			
To Closing Balance c/d		25,000			
		43,500			43,500

Calculation of Goodwill:

Machinery – Rs. 20,000	
Stock - Rs. 5,000	
Debtors - Rs. 15,000	
	40,000
Less: Creditors 5,000	
	35,000

Less: Purchase

Consideration	50,000
Goodwill	15,000

Calculation of Amount of Goodwill written off:

Opening value of Goodwill	–	15,000
Add: Addition	-	15,000
		30,000
Less: Closing value of Goodwill		25,000
Goodwill written off		5,000

## STATEMENT OF SOURCES AND APPLICATIONS OF FUNDS

Sources	Rs.	Applications	Rs.
Issue of shares for cash	25,000	Purchase of plant for cash	65,000
Issue of shares for current assets (stock 5000 + Deb 15000)	15,000	Payment of Dividend	5,000
Sale of plant	1,500		
Funds from operation	28,000		
Decrease in Working cap.	500		
	70,000		70,000

## NOTES

**1.2.31 Cash Flow Statement**

Fund Flow Statement explains the changes in working capital, of which, cash and bank constitute a small part. At times, management may face a peculiar situation of huge profits, yet cash strapped to pay dividends or even tax. For instance, if credit sales remain uncollected, profit may be good, but cash position will be dismal. If management is interested in knowing the movement of cash, it should resort to preparation of cash flow analysis through Cash Flow Statement.

**Meaning of Cash Flow Statement**

A Cash Flow Statement is one which is prepared from income statement and balance sheet, showing sources of cash and uses of cash. It reveals the inflow and outflow of cash during a particular period, and explains reasons for changes in cash position between two balance sheet dates.

**1.2.32 Importance or uses of Cash Flow Statement**

- It indicates the reasons for low cash balance despite huge profits or huge cash balance inspite of low profits.
- By comparing the actual cash flow statement with that of the projected one, it helps management in identifying the variation, and thus provide a basis for remedial measures.
- It reveals the liquidity position of the firm, by indicating the source of cash and its uses.
- Provides a basis for effective cash management by matching cash receipts and payments.
- It is an essential tool for short term planning.
- It helps in taking loans from banks by indicating the repayment capacity of the firm through cash flow statement.
- A projected cash flow statement aids in planning for the investment of surplus or meeting the deficit.
- It explains the reasons for changes in cash position between two balance sheet dates.

**NOTES****1.2.33 Distinction between Cash Flow and Fund Flow Statements**

<b>Cash Flow Statement</b>	<b>Fund Flow Statement</b>
1. It deals with cash and bank only	1. It deals with working capital, of which cash and bank are constituent parts.
2. Shows the causes for changes in cash position.	2. Shows the causes for changes in working capital position.
3. Records cash receipts and payments.	3. Records increase or decrease in working capital.
4. Inflow of cash will definitely result in inflow of funds.	4. Inflow of funds need not necessarily mean inflow of cash.
5. It starts with opening cash balance and ends with closing cash balance.	5. There are no such opening and closing balance of funds.
6. Useful for short-term financing.	6. Useful for long-term financing.
7. MzImproved cash position indicate improved working capital position.	7. Improved working capital position need not necessarily mean sound cash position.

**1.2.34 Difference between Cash Flow Statement and Receipts and Payment Account**

<b>Cash Flow Statement</b>	<b>Receipts and Payments A/c</b>
1. It is prepared from income statement and balance sheet of two dates.	1. Prepared on the basis of cash receipt and payment vouchers.
2. Discloses the amount of cash generated from operation and from other sources and the outflow of cash.	2. Contains revenue and capital receipts and payments.
3. Shows individual sources of cash and individual uses of cash in a summarized form.	3. Gives details of individual receipts and payments of cash in chronological order.

**1.2.35 Limitations of Cash Flow Statement**

- There is a lack of clarity in the precise definition of cash. Controversies exist over inclusion of items like cheques, stamps, postal orders, demand drafts, etc., in cash.
- Since near cash items are excluded from cash flow statement, it does not reveal the true liquidity position of the firm.
- Further, cash flow statements exclude non-cash items of expenses and incomes [example, depreciation and writing back of provision], therefore, they cannot provide a comprehensive picture of a firm's financial position.
- A fund flow statement, based on a under concept of funds, ie., working capital, presents a more complete picture than cash flow statement.

**1.2.36 Steps for preparing Cash Flow Statement**

- 1) Compute "Cash Trading Profit" by adding non cash and non-operating incomes from Net Profit [i.e. Current year profit – Previous year profit].
- 2) Calculate "Cash from Operations" by adding decrease in current assets and increase in current liabilities and deducting increase in current assets and decrease in current liabilities. The above two step can be done in the form of a statement, a specimen of which is given below:

**CALCULATION OF CASH FROM OPERATIONS**

Particulars	Rs.	Rs.
Net Profit [current year profit – previous year profit]		XXX
<b>Add: Non-cash and non-operating expenses:-</b>		
Depreciation	XXX	
Goodwill, Patents, Pre-liminary expenses, Discount on issue of shares, etc., written off	XXX	
Loss on sale of fixed assets	XXX	
Transfer of Reserves	XXX	
Proposed Dividends [if treated as non-current liability]	XXX	
Provision for Taxation[if treated as non-current liability]	XXX	
		XXX
<b>Less: Non-cash and non-operating incomes:</b>		
Writing back of excess provision	XXX	
Profit on sale of fixed assets	XXX	
Refund of income tax	XXX	
Dividend and Rent received	XXX	
		XXX
		XXX
<b>CASH TRADING PROFIT</b>		
<b>Add:</b> Decrease in current assets	XXX	
Increase in current liabilities	XXX	
		XXX
<b>Less:</b> Increase in current assets	XXX	
Decrease in current liabilities	XXX	
		XXX
<b>CASH FROM OPERATIONS</b>		XXX

# NOTES

3) If required, prepare non-current assets and non-current liabilities accounts, considering additional information. If any, given regarding such accounts. This is done to find out cash receipts and cash payments.

4) Prepare a cash flow statement by incorporating the data generated in the above three steps. Such cash flow statement can be prepared either in (a) Accounts form [OR] (b) Statement form as given below:

**(a) Accounts form:**

### CASH FLOW STATEMENT

Sources of Cash	Rs.	Application of Cash	Rs.
Opening cash and Bank balance	XXX	Cash lost in operation	XXX
Cash from operation	XXX	Purchase of assets	XXX
Issue of shares	XXX	Redemption of Preference Shares	XXX
Loan taken	XXX	Repayment of Debentures, Loans	XXX
Sale of assets	XXX	Dividend paid	XXX
Interest, Dividend received	XXX	Closing cash and Bank balance	XXX
	XXX		XXX

**(b) Statement form:**

### CASH FLOW STATEMENT

Particulars	Rs.	Rs.
Opening cash and Bank balance		XXX
<b>Add: Cash Inflows:</b>		
Cash from operations**	XXX	
Issue of shares	XXX	
Loan taken	XXX	
Sale of assets	XXX	
Interest, Dividend received	XXX	
		XXX
<b>Less: Cash Outflows:</b>		
Cash lost in operations**	XXX	
Purchase of assets	XXX	
Redemption of preference shares	XXX	
Repayment of debentures, loans	XXX	
Dividend paid	XXX	
		XXX
Closing cash and Bank balance		XXX

\*\* - Either of the two will appear

## Solved Problems

## 1.2.37 Calculation of Cash from Operations

## Illustration 31:

From the following Profit and Loss account you are required to compute cash from operations:

	Rs.		Rs.
To Rent	3,000	By Gross profit	30,000
To Salaries	4,000	By Profit on sale of Machinery	5,000
To Depreciation	3,000		
To Goodwill written off	3,000		
To Loss on sale of share	3,000		
To Provision for Taxation	4,000		
To Net profit	15,000		
	35,000		35,000

## Solution:

## CASH FROM OPERATIONS

	Rs.	Rs.
Net Profit		15,000
<b>Add: Non-operating expenses:</b>		
Depreciation	3,000	
Goodwill	3,000	
Loss on sale of shares	3,000	
Provision for taxation	4,000	
		13,000
		28,000
<b>Less: Non-operating Income:</b>		
Profit on Sale of Machinery		5,000
		23,000
<b>Add:</b> Decrease in Current Asset		
Increase in Current Liabilities		Nil
<b>Less:</b> Increase in Current Assets		
Decrease in Current Liabilities		Nil
Cash from Operations		23,000

# NOTES

**Illustration 32:** Compute Cash from operations from the following figures:

- i. Profit for the year 2004 is Rs. 10,000 after providing for depreciation of Rs. 2,000/-.
- ii. The current assets and liabilities of the business for the year ending 31<sup>st</sup> December, 2003 and 2004 are as follows:

	2003	Rs.	2004	Rs.
Sundry debtors		10,000		12,000
Provision for doubtful debts		1,000		1,200
Bills receivable		4,000		3,000
Bills payable		5,000		6,000
Sundry creditors		8,000		9,000
Inventories		5,000		8,000
Short-term investments		10,000		12,000
Outstanding expenses		1,000		1,500
Prepaid expenses		2,000		1,000
Accrued income		3,000		4,000
Income received in advance		2,000		1,000

**Solution:**

## CASH FROM OPERATIONS

	Rs.	Rs.
Net Profit		10,000
<b>Add: Non-operating expenses:</b>		
Depreciation		2,000
Cash trading profit		12,000
<b>Add: Decrease in CA / Increase in CL:</b>		
Decrease in Bills receivable	1,000	
Increase in Bills payable	1,000	
Increase in creditors	1,000	
Decrease in prepaid expenses	1,000	
Increase in provision for debts	200	
Increase in outstanding expenses	500	4,700
		16,700
<b>Less: Increase in CA / Decrease in CL:</b>		
Increase in Debtors	2,000	
Increase in inventories	3,000	
Increase in investments	2,000	
Increase in accrued income	1,000	
Decrease in income received in advance	1,000	
		9,000
Cash from operations		7,700

## 1.2.38 Preparation of Cash Flow Statements Comprehensive Problems

## NOTES

## Illustration 33:

Following are the comparative balance sheets of Western Systems Ltd.

<i>Liabilities</i>	2006 Rs.	2005 Rs.	<i>Assets</i>	2006 Rs.	2005 Rs.
<i>Share capital</i>	19,000	18,000	<i>Land and Building</i>	6,200	5,000
<i>Profit and Loss Appropriation a/c</i>	3,500	2,900	<i>Patent Rights</i>	900	800
<i>Trade Creditors and Bills payable</i>	7,600	6,400	<i>Trade Debtors</i>	19,000	15,500
			<i>Cash</i>	4,000	6,000
	30,100	27,300		30,100	27,300

**Required :** A Statement of cash flow.

**Solution:**

## CASH FLOW STATEMENT

	Rs.	Rs.
Opening cash balance		6,000
<b>Add: Cash inflows:</b>		
Increase in Trade Creditors	1,200	
Issue of shares	1,000	
Cash from trading operation (3,500 – 2,900)	600	2,800
		8,800
<b>Less: Cash outflows:</b>		
Increase in Debtors	3,500	
Purchase of Land & Building	1,200	
Purchase of patent rights	100	4,800
Closing cash balance		4,000

# NOTES

## Illustration 34:

From the following Balance Sheet as on 31<sup>st</sup> December 2003 and 31<sup>st</sup> December 2004, Prepare a cash flow statement:

<i>Liabilities</i>	<i>2003 Rs.</i>	<i>2004 Rs.</i>	<i>Assets</i>	<i>2003 Rs.</i>	<i>2004 Rs.</i>
<i>Share capital</i>	<i>1,00,000</i>	<i>1,50,000</i>	<i>Fixed Assets</i>	<i>1,00,000</i>	<i>1,50,000</i>
<i>P&amp;L A/c</i>	<i>50,000</i>	<i>80,000</i>	<i>Goodwill</i>	<i>50,000</i>	<i>40,000</i>
<i>General reserve</i>	<i>30,000</i>	<i>40,000</i>	<i>Inventories</i>	<i>50,000</i>	<i>80,000</i>
<i>6% Bonds</i>	<i>50,000</i>	<i>60,000</i>	<i>Debtors</i>	<i>50,000</i>	<i>80,000</i>
<i>Sundry creditors</i>	<i>30,000</i>	<i>40,000</i>	<i>Bills Receivable</i>	<i>10,000</i>	<i>20,000</i>
<i>Outstanding expenses</i>	<i>10,000</i>	<i>15,000</i>	<i>Bank</i>	<i>10,000</i>	<i>15,000</i>
	<i>2,70,000</i>	<i>3,85,000</i>		<i>2,70,000</i>	<i>3,85,000</i>

## Solution:

### CASH FROM OPERATIONS

		<i>Rs.</i>
Net profit ( 80,000 – 50,000)		30,000
<b>Add: Non-operating expenses:</b>		
Goodwill written off	10,000	
Transfer to General reserve	10,000	20,000
		50,000
<b>Less: Non-operating income:</b>		Nil
Cash Trading Profit		50,000
<b>Add: Decrease in CA / Increase in CL:</b>		
Increase in creditors	10,000	
Increase in outstanding expenses	5,000	15,000
		65,000
<b>Less: Increase in CA / Decrease in CL:</b>		
Increase in inventories	30,000	
Increase in Debtors	30,000	
Increase in B/R	10,000	70,000
Cash lost in operation		(-)5,000

## CASH FLOW STATEMENT

	Rs.	Rs.
Opening cash balance		10,000
<b>Add: Cash inflows:</b>		
Issue of shares	50,000	
Issue of Debentures	10,000	60,000
		70,000
<b>Less: Cash outflows:</b>		
Purchase of Fixed assets	50,000	
Cash lost in operation	5,000	55,000
Closing cash balance		15,000

## NOTES

**Illustration 35:**

From the following Balance sheet of Thamiz Ltd., make out a statement of cash flow.

<i>Liabilities</i>	2006 Rs.	2007 Rs.	<i>Assets</i>	2006 Rs.	2007 Rs.
<i>Equity share capital</i>	3,00,000	4,00,000	<i>Goodwill</i>	1,15,000	90,000
<i>8% Redeemable Preference share</i>	1,50,000	1,00,000	<i>Land and Building</i>	2,00,000	1,70,000
<i>General Reserve</i>	40,000	70,000	<i>Plant and Machinery</i>	80,000	2,00,000
<i>Profit &amp; Loss a/c Proposed Dividend</i>	30,000 42,000	48,000 50,000	<i>Debtors</i>	1,60,000	2,00,000
<i>Creditors</i>	55,000	83,000	<i>Stock</i>	77,000	1,09,000
			<i>Bills Receivable</i>	20,000	30,000
<i>Bills payable</i>	20,000	16,000	<i>Cash in hand</i>	15,000	10,000
<i>Provision of tax</i>	40,000	50,000	<i>Cash at bank</i>	10,000	8,000
	6,77,000	8,17,000		6,77,000	8,17,000

**NOTES***Additional information:*

- a) Depreciation of Rs.10,000 and Rs.20,000 have been charged on Plant and Land and Building a/c respectively in 2007.
- b) Dividend of Rs.20,000 has been paid in 2007.
- c) Income tax Rs.35,000 was paid in 2007.

**Solution:**

Dr.	Plant a/c		Cr.
	Rs.		Rs.
To Balance b/d	60,000	By Adjusted p&l a/c – Depreciation	10,000
To cash – purchase (B.F)	1,30,000	By Balance c/d	2,00,000
	2,10,000		2,10,000

Dr.	Land and Building a/c		Cr.
	Rs.		Rs.
To Balance b/d	2,00,000	By Adjusted p&l a/c – Depreciation	20,000
		By cash – sales (B/P)	10,000
		By Balance c/d	1,70,000
	2,00,000		2,00,000

Dr.	Provision for Tax a/c		Cr.
	Rs.		Rs.
To Cash – Tax paid	35,000	By Balance b/d	40,000
To Balance c/d	50,000	By Adjusted P&L a/c – Provision (B/F)	45,000
	85,000		85,000

**NOTES**

Dr.	Proposed Dividend a/c		Cr.
	Rs.		Rs.
To Cash – Dividend paid	20,000	By Balance b/d	42,000
To Balance c/d	50,000	By Adjusted P&L a/c – Provision (B/F)	28,000
	70,000		70,000

**CASH FROM OPERATIONS**

	Rs.	Rs.
Net profit (48,000 – 30,000)		18,000
<b>Add: Non-operating expenses:</b>		
Goodwill written off	25,000	
Depreciation on Land & Building	20,000	
Depreciation on plant	10,000	
General Reserve	30,000	
Proposed Dividend	28,000	
Provision for Tax	45,000	1,58,000
Cash trading profit		1,76,000
<b>Add: Decrease in CA / Increase in CL:</b>		
Increase in creditors		28,000
		2,04,000
<b>Less: Increase in CA / Decrease in CL:</b>		
Increase in Debtors	40,000	
Increase in Stock	32,000	
Increase in B/R	10,000	
Decrease in B/P	4,000	86,000
Cash from operations		1,18,000

## NOTES

## CASH FLOW STATEMENT

	Rs.	Rs.
Opening cash and Bank balance		25,000
<b>Add: Cash inflows:</b>		
Sale of Land and Building	10,000	
Issue of share capital	1,00,000	
Cash from operation	1,18,000	2,28,000
		2,53,000
<b>Less: Cash outflows:</b>		
Purchase of plant	1,30,000	
Redemption of preference share	50,000	
Dividend paid	20,000	
Tax paid	35,000	2,35,000
Closing cash and bank balance		18,000

**Illustration 36:** Balance sheets of a firm is given below (Values in Rs)

	2003	2004		2003	2004
Share capital	1,40,000	1,48,000	Cash	18,000	15,600
Reserves	2,000	3,000	Debtors	29,800	35,400
Bank Loan	22,000	9,000	Stock	98,400	85,400
Creditors	10,000	12,000	Land	40,000	60,000
Profit & Loss a/c	18,200	19,600	Investment	15,000	7,000
Proposed Dividend	14,000	14,800	Goodwill	5,000	3,000

During the year ending 31<sup>st</sup> March 2004:

- Land costing Rs.20,000 was sold for Rs.25,000
- Investments costing Rs.10,000 was sold for Rs.10,500.

Prepare a Cash Flow Statement:

**Solution:**

Dr.	Land A/c		Cr.
	Rs.		Rs.
To Opening balance	40,000	By Cash sale	25,000
To Adjusted P & L a/c (Profit on sale)	5,000	By Closing Balance	60,000
To Cash Purchases (Bal.Fig)	40,000		
	85,000		85,000

**NOTES**

Dr.		Investment A/c		Cr.	
	Rs.		Rs.		
To Opening balance	15,000	By Cash sale	10,500		
To Adjusted P & L a/c (Profit on sale)	500	By Closing Balance	7,000		
To Cash Purchases (Bal.Fig)	2,000				
	17,500				17,500

Dr.		Proposed Dividend A/c		Cr.	
(Treated as Non-current liability)					
	Rs.		Rs.		
To Bank (Payment)	14,000	By Opening balance	14,000		
To Closing Balance	14,800	By Adjusted P&L a/c (Current year dividend)	14,800		
	28,800				28,800

Dr.		Adjusted Profit and Loss A/c		Cr.	
	Rs.		Rs.		
To Goodwill written off	2,000	By Opening balance	18,200		
To Transfer to reserve	1,000	By Land (Profit on sale)	5,000		
To Proposed dividend	14,800	By investment (profit on sale)	500		
To Closing balance	19,600	By Cash trading profit (Fund from operations)	13,700		
	37,400				37,400

**CASH FROM OPERATIONS**

	Rs.
Fund from operations	13,700
<b>Add:</b>	
Decrease in stock	13,000
Increase in Creditors	2,000
	28,700
<b>Less:</b>	
Increase in Debtors	5,600
Cash from operations	23,100

## NOTES

## CASH FLOW STATEMENT

	Rs.	Rs.
Opening Balance		18,000
<b>Add: Cash inflows:</b>		
Sale of land	25,000	
Sale of investment	10,500	
Issue of shares	8,000	
Cash from operations	23,100	66,600
		84,600
<b>Less: Cash Outflows:</b>		
Purchase of land	40,000	
Purchase of investment	2,000	
Dividend paid	14,000	
Bank loan repaid	13,000	69,000
Closing balance of cash		15,600

**Illustration 37:**

Prepare Cash Flow Statement from the following Balance Sheets of XL Engineering Ltd., for the year ended 31<sup>st</sup> December 2004.

<i>Liabilities</i>	2003 Rs.	2004 Rs.	<i>Assets</i>	2003 Rs.	2004 Rs.
<i>Share capital</i>	17,00,000	18,35,000	<i>Buildings</i>	8,00,000	10,00,000
<i>Reserves</i>	40,000	83,700	<i>Plant &amp; Machinery</i>	2,50,000	3,70,000
<i>P&amp;L Appropriation</i>	1,00,000	1,30,000	<i>Fixture &amp; Fittings</i>	5,000	6,000
<i>Provision for Dividends</i>	70,000	50,000	<i>Cash</i>	2,000	2,200
<i>Creditors</i>	1,00,000	95,000	<i>Debtors</i>	1,00,000	45,000
<i>Bank Overdraft</i>	8,000	18,000	<i>Accounts Receivables</i>	8,000	9,000
<i>Bills payable</i>	14,000	13,000	<i>Stock</i>	4,00,000	3,43,700
			<i>Expenses Prepaid</i>	3,000	3,100
<i>Loan on Mortgage</i>	10,000	70,000	<i>Investments</i>	1,64,000	1,70,000
			<i>Goodwill</i>	3,00,000	3,43,000
			<i>Preliminary Expenses</i>	10,000	2,000
	20,42,000	22,94,700		20,42,000	22,94,700
				0	



**NOTES****Workings: ADJUSTED PROFIT AND LOSS ACCOUNT**

	Rs.		Rs.
To Depreciation:			
Furniture & Fixtures	400	By Balance b/d	1,00,000
Plant & Machinery	32,000	By Funds From Operations:	2,11,100
		(Balancing figure)	
Buildings	27,000	(Balancing Figure)	
To Proposed Dividend	50,000		
To Interim Dividend	20,000		
To preliminary expenses written off	8,000		
To Reserves	43,700		
To Balance c/d	1,30,000		
	3,11,100		3,11,100

**CASH FROM OPERATIONS**

	Rs.	Rs.
Fund from operations		2,11,100
<b>Add:</b> Decrease in debtors		55,000
Decrease in stock		56,300
		3,22,400
<b>Less:</b> Decrease in creditors	5,000	
Decrease in bills payable	1,000	
Increase in Accounts Receivable	1,000	
Increase in prepaid	100	7,100
Cash from operations:		3,15,300

## INVESTMENT ACCOUNT

	Rs.		Rs.
To Balance b/d	1,64,000	By Bank (Interest)	3,000
To Bank (Purchase)	9,000	By Balance c/d	1,70,000
	1,73,000		1,73,000

## NOTES

**1.2.39 Summary**

Financial statements consists of Trading and Profit and Loss account and Balance Sheet.

‘Financial analysis’ or ‘analysis and interpretation of financial statements’ is a process of establishing relationship between items in the balance sheet, profit and loss account and trading account with the object of obtaining a better understanding of a firms financial status and performances.

There are four types of financial analysis:

- External analysis: This is one done by outsiders who do not have access to internal accounting records of a company.
- Internal analysis: This type of analysis is done by internal parties.
- Horizontal analysis: It refers to the comparison of financial data of a firm for several past years.
- Vertical analysis: It is a study of relationship between various accounting data in the financial statement of one accounting year.

There are five popular tools and techniques for analysing financial statements as given below:

- **Comparative financial statements**: Here, accounting data for two or more periods are placed side by side to facilitate comparison.
- **Common size financial statement**: In common size balance sheet, each item on the asset side is expressed as percentage of total assets. Similarly, each item on the liability side is expressed as a percentage of total liabilities.
- **Ratio analysis**: Financial ratio is one which shows a numerical relationship between two related accounting data in a financial statement.

Ratio analysis is a process of computing various ratios and interpreting them in order to arrive at some conclusion regarding the financial position and performance of the company.

The power of ratio analysis as a financial tools depends upon the competence of the analyst. Ratios may be used as a symptom like pulse rate, blood pressure, body temperature, etc., and their interpretation tinges upon the calibre of the analyst.

## NOTES

Generally, a company is analysed in terms of the following:

- Profitability: Has the company made good amount of profit in relation to its sales and investment made?
- Liquidity: Does the business have enough money to pay its current bills?
- Solvency: Will the company be in a position to service its debts in the long run in terms of interest payment and repayment of principal?
- Asset usage: How has the company used its fixed and current assets?
- Gearing: Does the company have a lot of debt in its capital structure or is it funded mainly by share capital?
- Capital Market: How is the company perceived in the capital market by shareholder's and prospective investors?

Accordingly, ratios have been classified into six categories as follows:

- Profitability ratios: These ratios measure the profit earned by a business in relation to its sales and assets and capital employed.
- Liquidity ratios: Liquidity refers to a firm's ability to pay its current bill, i.e., current liabilities as and when they become due. Such current liabilities are paid by revealing amount from current assets. If current assets can safely pay off current liabilities, the liquidity position of a company is said to be good.
- Solvency ratios: These indicate the ability of a concern to meet its long term obligations in the form of payment of interest on its long term borrowings and repayment of such principal.
- Asset usage or Activity ratios: These ratios indicate the efficiency with which the management has used its fixed and current assets.
- Capital Gearing ratio: It indicates the proportion of borrowed funds to shareholder's fund in the capital structure of the company.
- Investor or Capital market ratios: These ratios are very useful for potential investors in the capital market. It studies the earnings per share; dividend pay out and retention and the market price in relation to the firm's earnings.

Ratios are not without their pitfalls. One has to tread cautiously while selecting and interpreting ratios.

**Fund Flow Statement:** It explains the reasons for the changes in the working capital position of a company between two balance sheet dates.

For the purpose of fund flow analysis, accounts shown in balance are bifurcated into current and non-current accounts.

Current accounts contain current assets and current liabilities.

Non-current accounts contain fixed assets and fixed liabilities.

Flow of funds or working capital occurs only when a transaction involves one current account and one non-current account.

Transaction between two current accounts or between two non-current accounts does not result in flow of funds.

The process of preparing fund flow statement involves the following steps:

1. Calculation of changes in working capital by preparing a schedule of changes in working capital.
2. Opening of accounts for non-current items to identify the receipt and application of funds.
3. Computation of “Funds from operations” by preparing Adjusted Profit and Loss account.
4. Preparation of Fund Flow Statement by incorporating sources of funds on one side and application of funds on another, along with the data generated in the above three steps.

**Cash Flow statement:** It is one which is prepared from income statement and balance sheet, showing sources of cash and uses of cash. It explains the changes in cash position between two balance sheet dates.

While fund flow studies the flow of working capital, of which cash and bank are constituent part, cash flow statement fully studies cash alone.

It explains why a company is cash strapped despite huge profits, or huge cash balance inspite of low profits.

Preparation of Cash Flow Statement involves the following steps:

1. Calculation of Cash Trading Profit.
2. Computation of Cash From Operations.
3. Opening of accounts for non-current items to find out cash receipts and cash payments.
4. Preparation of Cash Flow Statement by incorporating sources of cash on one side and application of cash on another, along with the data generated in the above three steps.

Cash Flow Statement can be prepared in accounts form or statement form.

# NOTES

## 1.2.40 Multiple Choice Questions

- 1) Financial statements are meaningful and useful only when they are:
  - (a) Verified
  - (b) Presented to owners
  - (c) Analysed and interpreted
  - (d) Published.
- 2) Vertical analysis is made on the basis of
  - (a) Single set of financial statements
  - (b) Multiple set of financial statement
  - (c) Schedules attached to financial statements
  - (d) None of these
- 3) Horizontal analysis is done on the basis of
  - (a) Financial statements of a particular year
  - (b) Financial statements of several years
  - (c) Half yearly statement
  - (d) None of the above
- 4) Comparative statements are in the form of
  - (a) Horizontal analysis
  - (b) Vertical analysis
  - (c) External analysis
  - (d) Internal analysis
- 5) Common size statements are in the form of
  - (a) Dynamic analysis
  - (b) Horizontal analysis
  - (c) Vertical analysis
  - (d) None of the above
- 6) The current asset to current liability ratio is said to be satisfactory if it is
  - (a) 1:2
  - (b) 2:1
  - (c) 1:1
  - (d) 0.5:1

- 7) The two elements in a current ratio are current assets and
  - (a) Liquid liabilities
  - (b) Quick liabilities
  - (c) Current liabilities
  - (d) Fixed liabilities
- 8) Long term solvency is indicated by
  - (a) Current ratio
  - (b) Debt-Equity ratio
  - (c) Profitability ratio
  - (d) Liquidity ratio
- 9) Long term creditors are interested in
  - (a) Profitability of the company
  - (b) Long term solvency of the company
  - (c) Both 'a' and 'b'
  - (d) None of the above
- 10) Liquid assets exclude
  - (a) Stock
  - (b) Prepaid expenses
  - (c) Both 'a' and 'b'
  - (d) None of the above
- 11) Liquidity ratios are concerned with
  - (a) Long term solvency
  - (b) Short term solvency
  - (c) Liquid assets and liquid liabilities
  - (d) Current assets and current liabilities
- 12) Return on Shareholder's fund is calculated by Profit After Tax by
  - (a) Equity capital
  - (b) Preference capital
  - (c) Reserves & Surplus
  - (d) All the above
- 13) In Debt Equity ratio, the term 'equity' means
  - (a) Equity capital
  - (b) Preference capital
  - (c) Equity shareholder's
  - (d) Equity capital and Preference capital and Reserves and Surplus.

**NOTES**

- 14) P/E ratio studies the relationship between
- (a) Profit and Equity capital
  - (b) Price and Earnings per share
  - (c) Preference and Equity capital
  - (d) Price and Equity capital
- 15) Current Ratio indicates
- (a) Efficiency of Management
  - (b) Ability to meet short term obligations
  - (c) Profitability
  - (d) None of these
- 16) The term 'fund' in Fund Flow Statement refers to
- (a) Cash
  - (b) Profit
  - (c) Working Capital
  - (d) Reserves
- 17) Depreciation is
- (a) External source of funds
  - (b) An application of funds
  - (c) A non-fund item
  - (d) None of the above
- 18) Which of the following is not normally paid from working capital
- (a) Payment of wages
  - (b) Payment to creditors
  - (c) Redemption of debentures
  - (d) Payment of salary
- 19) Raising cash by issue of new shares
- (a) Increases working capital
  - (b) Decreases working capital
  - (c) Does not affect working capital
  - (d) Nullifies the increase in working capital
- 20) Short term investment is
- (a) An application of fund
  - (b) Current asset
  - (c) Source of funds
  - (d) Current liability

- 21) Cash from operations is the result of
- Profit from business activities
  - Cash from business activities and changes in current assets and liabilities
  - Sale of fixed assets
  - Borrowings from outsiders
- 22) Increase in current asset
- Increases cash
  - Does not affect cash
  - Decreases cash
  - None of the above
- 23) Decrease in current liability
- Decreases cash
  - Increases cash
  - Does not affect cash
  - None of the above
- 24) Cash flow statement helps in
- Long term planning
  - Short term planning
  - Projecting sales
  - Midterm planning
- 25) While calculating cash trading profit, depreciation is
- Ignored
  - Added back to net profit
  - Deducted from net profit
  - Partly added and partly deducted.

**Answers:**

- (1). C (2) a (3) b (4) a (5) c (6) b (7) c (8) b (9) c (10) c  
 (11) b (12) d (13) d (14) b (15) b (16) c (17) c (18) c (19) a (20) b  
 (21) b (22) c (23) a (24) b (25) b

**1.2.41 Short Questions**

- What do you understand by analysis and interpretation of financial statements?
- Explain the various types of financial analysis?
- List out the tools for analysis of financial statements?

**NOTES**

- 4) What is 'Comparative Financial Statement'?
- 5) What is 'Common size Financial Statement'?
- 6) Explain the meaning of 'Trend Analysis'?
- 7) What is Ratio Analysis?
- 8) What is Fund Flow Statement?
- 9) What do you understand by Cash Flow Statement?
- 10) Elucidate the steps involved in ratio analysis?
- 11) What do you understand by the term 'Funds'?
- 12) What is working capital?
- 13) Explain the meaning of 'Profitability ratios'?
- 14) Distinguish between Liquidity and Solvency ratios?
- 15) Explain the meaning and significance of Current Ratio?
- 16) What is P/E Ratio? What does it convey?
- 17) Explain the implications of 'Debt Equity Ratio'?
- 18) Describe the importance of 'Interest Coverage Ratio'?
- 19) Explain the concept of 'Flow of Funds'?
- 20) What is 'Funds from Operations'?
- 21) What is Schedule of Changes in Working Capital?
- 22) Explain the meaning of current assets and current liabilities with examples?
- 23) How do you ascertain 'Cash from Operations'?
- 24) Explain the meaning of 'Cash Flow'?
- 25) Enumerate the difference sources and uses of cash?
- 26) You are given the following information.

Calculate

	Rs.
Cash	18,000
Debtors	1,42,000
Closing Stock	1,80,000
Bills Payable	27,000
Creditors	50,000
Outstanding expenses	15,000
Tax Payable	75,000

- (a) Current Ratio
- (b) Liquid Ratio
- (c) Absolute Liquid Ratio

**(Ans: CR: 2.04; Liquid Ratio: 0.96;  
Absolute Liquid Ratio: 0.11)**

**NOTES**

27). From the following details of a trader you are required to calculate stock turnover ratio.

	Rs.
Sales	30,984
Sales Returns	380
Opening stock at cost	1,378
Closing stock at cost	1,814
Gross profit for the year	8,068

**(Ans: St.Tor: 14.12)**

28). From the following figures calculate the creditors turnover ratio and the average age of accounts payable

	Rs.
Credit purchases during 2001	1,00,000
Creditors on 1.1.2001	20,000
Creditors on 31.12.2001	10,000
Bills payable on 1.1.2001	4,000
Bills payable on 31.12.2001	6,000

**(Ans: CTOR: 5; Avg. age: 73 days)**

29). From the following income statement of Win Ltd. Prepare common-size income statement:

	2001 (Rs.)	2002 (Rs.)
Sales	5,00,000	7,00,000
Miscellaneous income	20,000	15,000
	5,20,000	7,15,000
Expenses:		
Cost of sales	3,25,000	5,10,000
Office expenses	20,000	25,000
Selling expenses	30,000	45,000
Interest	25,000	30,000
	4,00,000	6,10,000
Net Profit	1,20,000	1,05,000

**(Ans: 2001: GP: 35%; Operating Profit: 25%; Net Profit: 24%**

**2002: GP: 27.14%; Operating Profit: 17.14%; Net Profit: 15%)**

**NOTES**

30). Prepare a common size statement from the following balance sheets of Vens Ltd:

**Balance Sheets as on 31<sup>st</sup> December (Rs. In Lakhs)**

Liabilities	2007	2008	Assets	2007	2008
Share capital	200	250	Fixed assets	100	120
Reserves	80	100	Investments	50	60
Debentures	100	80	Stock	65	75
Creditors	70	95	Debtors	80	90
Bills payable	50	75	Bills receivables	95	105
			Cash at bank	110	150
	500	600		500	600

**(Ans: 2007: Fixed assets: 20%; Investments: 10%; Current assets: 70%;**

**Current liabilities: 24%; Shareholder's funds: 56%**

**2008: Fixed assets: 20%; Investments: 10%; Current assets: 70%;**

**Current liabilities: 28.33%; Shareholder's funds: 58.33%)**

31). How do the following items appear in comparative income statement?

	31.3.2008	31.3.2009
Sales	2,00,000	3,00,000
Cost of sales	1,40,000	2,24,000

**(Ans: Sales: +50%; COS: +60%)**

32). How do the following items appear in comparative balance sheets?

	31.3.2008	31.3.2009
Fixed assets	10,00,000	12,00,000
Current assets	3,00,000	6,00,000

**(Ans: FA: +20%; CA: +100%)**

33) From the following information, show the results of operations of a manufacturing concern using trend percentages with 1987 as base year.

**(amount in '000s)**

Assets	1990	1989	1988	1987
Sales	1,300	1,200	950	1,000
Cost of goods sold	728	696	589	600
Gross profit	572	504	361	400
Selling expenses	120	110	97	100
Net operating profit	452	394	264	300

**(Ans:**

	1987%	1988%	1989%	1990%
Sales	100	95	120	130
COGS	100	98.17	116	121.33
Gross profit	100	90.25	126	143
Selling expenses	100	97	110	120
Net profit	100	88	131.33	150.67)

34) Calculate funds from operations.

- Net profit for the year ended 31.3.2000, RS. 6.50,000
- Profit on sale of building Rs. 40,000
- Goodwill written off during the year Rs. 10,000
- Old machinery worth Rs. 8,000 had been sold for Rs. 6, 500
- Depreciation has been provided on plant at 20% per year. The value of the plant is Rs. 5,00,000.

**(Ans: FFO: Rs. 7,21,500)**

35). The Petrimix Corporation's annual report for 1984 shows the following account balances:

	1984	1983
Investments in Madura Coats Ltd. (Rs.)	28,000	34,000

A note to the statement reports that the corporation sold part of its investments for Rs. 23,500 and there was a gain of Rs. 13,500 on the transaction. Calculate sources and uses of funds relating to the investments.

**(Ans: Sources of funds: Rs. 23,500; Uses: Rs. 4,000)**

# NOTES

## 1.2.42 Long Questions

- 1). Explain the different tools and techniques used in Financial Statement analysis?
- 2). Explain the importance of financial statement analysis?
- 3). What is ratio analysis? What are the steps involved in it?
- 4). Discuss the uses and limitations of ratio analysis?
- 5). “Ratio analysis is a tool of management for measuring efficiency and guiding business policies” – Discuss?
- 6). “Debt Equity ratio is the barometer of the financial health of a business unit”. Explain the significance of the statement?
- 7). State and explain how accounting ratios are classified?
- 8). What do you understand by ‘Funds’ and ‘Funds flow’? How do you analyse the flow of funds?
- 9). What is Fund Flow Statement. Explain the steps involved in its preparation?
- 10). Bring out the difference between Fund Flow Statement and Balance Sheet?
- 11). Discuss the importance of Fund Flow Statement?
- 12). What are the limitations of Fund Flow Statement?
- 13). What is Cash Flow Statement? Explain its importance?
- 14). Distinguish between Fund Flow and Cash Flow Statement?
- 15). How Cash Flow Statement differ from Receipts and Payments Account?
- 16). What are the limitations of Cash Flow Statement?
- 17). Explain the steps involved in the preparation of Cash Flow Statement?
- 18). How do you ascertain ‘Cash From Operations’?
- 19). Enumerate the different sources and uses of cash?
- 20). Explain the different ways of preparing Cash Flow Statement.
- 21). From the following Profit and Loss Accounts and Balance Sheets for the year ended 31<sup>st</sup> Dec. 2003 and 2004, prepare comparative income statement and comparative Balance Sheets.

**PROFIT AND LOSS ACCOUNT**

(In lakhs of Rs.)

**NOTES**

	<b>2003 Rs.</b>	<b>2004 Rs.</b>		<b>2003 Rs.</b>	<b>2004 Rs.</b>
To Cost of Sales	600	750	By Net Sales	800	1,000
To Administrative Expenses	20	20			
To Selling Expenses	30	40			
To Net Profit	150	190			
	800	1,000		800	1,000

**BALANCE SHEETS**

Liabilities	2003 Rs.	2004 Rs.	Assets	2003 Rs.	2004 Rs.
Bills Payable	50	75	Cash	100	140
Sundry Creditors	150	200	Debtors	200	300
Tax Payable	100	150	Stock	200	300
6% Debentures	100	150	Land	100	100
10% Preference shares	300	300	Buildings	300	270
Equity Shares	400	400	Plant	300	270
Reserves	200	245	Furniture	100	140
	1,300	1,520		1,300	1,520

22). A Partial list of trend and common size percentages for ABC Co., Ltd. is given below:

	<b>December Current Year</b>	<b>December Previous Year</b>
Trend percentages:		
Sales(net)	120%	100%
Cost of goods sold	?	100%
Gross profit on sales	?	100%
Operating expenses and Income taxes	?	100%
Net Income	?	100%
Common-size percentages:		
Sales(net)	100%	100%
Cost of goods sold	?	?
Gross profit on sales	40%	?
Operating expenses and Income taxes	20%	25%
Net income	20%	10%

= Rs. 20,000

**NOTES**

- a). Determine the missing trend and common-size percentages.  
 b). Compute the net income for the current year.

**(Ans:**

	Previous Year	Current Year	Trend %
<b>Sales</b>	<b>2,00,000</b>	<b>2,40,000</b>	<b>120</b>
<b>COGS</b>	<b>1,30,000</b>	<b>1,44,000</b>	<b>110.77</b>
<b>GP</b>	<b>70,000</b>	<b>96,000</b>	<b>137.14</b>
<b>Oper. Exp.</b>	<b>50,000</b>	<b>48,000</b>	<b>96%</b>
<b>Net income</b>	<b>20,000</b>	<b>48,000</b>	<b>240)</b>

**(Hint: Net income for previous year Rs. 20,000 is 10% of the sales.**

$$\text{Hence, sales} = \text{Rs. } 2,00,000 \left( \frac{20,000}{10} \times 100 \right)$$

23). The summary of balance sheet data in respect of Deri Ltd. and Heri Ltd. is as under:

	Deri Ltd. (Rs.)	Heri Ltd. (Rs.)
Buildings	1,00,000	4,50,000
Machinery	3,00,000	7,50,000
Share Capital	4,50,000	14,50,000
Retained earnings	50,000	33,000
Debtors	1,15,000	1,60,000
Stock	60,000	2,17,000
Cash	10,000	5,000
Prepaid expenses	5,000	3,000
Creditors	91,000	1,00,000
Liability for expenses	9,000	17,000
Preliminary expenses	10,000	15,000

Prepare common-size balance sheets.

24). From the following information find out

- i. Current assets
- ii. Current liabilities
- iii. Stocks
- iv. Fixed assets
  - a. Current ratio : 2:5
  - b. Liquid ratio : 1:5

**NOTES**

- c. Fixed assets/ Proprietary funds : 0.75
- d. Working capital – Rs. 60,000
- e. Reserves and Surplus – Rs. 40,000
- f. Bank Overdraft – Rs. 10,000
- g. There is no long-term loan or fictitious assets.

**(Ans: (i) Rs. 1,00,000 (ii) Rs. 40,000 (iii) Rs. 40,000 (iv) Rs. 1,80,000)**

25). With the help of the following ratios. Draw the balance sheet of the company for the year 2005.

Current ratio	2.5
Liquidity ratio	1.5
Net Working capital	Rs. 3,00,000
Stock turnover ratio (cost of sales/closing stock)	6 times
Gross profit ratio	20%
Debt collection period	2 months
Fixed assets turnover ratio (on cost of sales)	2 times
Fixed assets to shareholder's net worth	0.80
Reserves and surplus to capital	0.50

**(Ans: Assets – Total: Rs. 11,00,000; Stock: Rs. 2,00,000; Debtors: Rs. 2,50,000;**

**Other current assets: Rs. 50,000; Fixed assets : Rs. 6,00,000; Liabilities – Total: Rs.11,00,000; Capital: Rs. 5,00,000; Reserves and Surplus:**

**Rs. 2,50,000; Current liabilities: Rs. 2,00,000; Long-term loans(Bal.fig. in balance sheet) : Rs. 1,50,000)**

26). From the following data, prepare the Balance Sheet of a Company as on 31-12-2005:

Fixed assets	-	Rs. 6,00,000
Working capital	-	Rs. 4,00,000
Current ratio	-	2 times
Fixed assets to turnover	-	4 times
Gross profit ratio	-	25%
Debtors velocity	-	1.5 months
Creditors velocity	-	2 months
Stock	-	2 months
Net profit	-	5% of turnover

**NOTES**

Reserve	-	2/3 of net profits
Capital gearing	-	1:1

**(Ans: Assets – Total : Rs. 14,00,000; Fixed assets : Rs. 6,00,000; Debtors : Rs. 3,00,000; Stock : Rs. 3,00,000; Other current assets : Rs. 2,00,000; Liabilities – Total : Rs. 14,00,000; Capital : Rs. 4,20,000; Reserves : Rs. 80,000; Long-term borrowings : Rs. 5,00,000; Current liabilities : Rs. 4,00,000)**

27). From the following information, prepare projected Trading and Profit and Loss Account and Balance Sheet of a firm relating to the year 2004. Prepare Balance Sheet .

Ratio of Gross Profit	25%
Net Profit to Equity Capital	10%
Stock Turnover Ratio	5 times
Average Debt Collection period	2 times
Creditors Velocity	3 months
Current ratio	2
Proprietary Ratio (Fixed Assets to Capital Employed)	80%
Capital Gearing Ratio (Preference Shares and Debentures to Equity)	30%
General Reserve & Profit & Loss to issued Equity capital	25%
Preference share capital to Debentures	2

Cost of sales consists of 40% for materials and balance for wages and overheads.  
Gross Profit Rs. 6,00,000.

**(Ans: GP Rs. 6,00,000; NP Rs. 1,06,400; B/s Total Rs. 22,80,000)**

28). From the following information, you are required to prepare a Balance Sheet.

Current ratio	1.75
Liquid ratio	1.25
Stock turnover ratio(Cost of sales/closing stock)	9
Gross profit ratio	25%
Debt collection period	1.5months
Reserves and surplus to capital	0.20
Fixed assets turnover ratio(on cost of sales)	1.2
Capital gearing ratio (long term debt to capital)	0.6
Fixed assets to shareholders net worth	1.25
Sales for the year	Rs. 12,00,000

**(Ans: B/S total: Rs. 11,00,000; Capital: Rs. 5,00,000;**

**NOTES**

**Reserves & Surplus: Rs. 1,00,000; LT debt: Rs. 3,00,000;  
CL: Rs. 2,00,000; Fixed assets: Rs. 7,50,000; Stock: Rs. 1,00,000;  
Debtors: Rs. 1,50,000; other current assets (b.f.): Rs. 1,00,000)**

29). Given the following information for ABC Co. at the end of 2008 determine missing figures of income statement and the Balance Sheet.

Net sales	Rs. 1,00,000
Debtors turnover based on net sales	2
Inventory control	1.25
Fixed assets turnover on sales	0.8
Debt assets ratio	0.6
Net Profit margin(after tax)	5%
Gross profit margin	25%
Return on investment in assets	2%

**Income Statement** **Rs.**

Net sales	1,00,000
Less: Cost of sales	-
Gross margin	-
Less: Other expenses	-
Earnings before tax	-
Less: Tax 50%	-
Earnings after tax	-

**Balance Sheet**

Liabilities	Rs.	Assets	Rs.
Equity	-	Fixed assets (net)	-
Long term debt	-	Inventory	-
Short term debt	50,000	Debtors	-
		Cash & other current assets	-
	-		-

**(Ans: Cost of sales : Rs. 75,000; GP : Rs. 25,000; other exp : Rs. 15,000; EBT:  
Rs. 10,000;**

**EAT : Rs. 5,000; FA: Rs. 1,25,000; Debtors: Rs. 50,000; Inventory :**

**NOTES****Rs. 60,000;****Cash & other CA: Rs. 15,000; LT debt : Rs. 1,00,000; ST Debt : Rs. 50,000;****Equity (b.f.) : Rs. 1,00,000)**

1) A firm has owners equity of Rs. 1,00,000. The ratios of the firm are:

Complete the following balance sheet, given the information above:

Current debt to total debt	0.40
Total debt to owners equity	0.60
Fixed assets to owner's equity	0.60
Total assets turnover	2 times
Inventory turnover	8 times

**Balance Sheet**

<b>Liabilities</b>		<b>Rs.</b>	<b>Assets</b>		<b>Rs.</b>
Current debt	-		Cash	-	
Long term debt	-		Inventory	-	
Total debt		-	Total current assets		-
Owner's equity		-	Fixed assets		-
Total equity		-	Total assets		-

**(Ans: Cash: Rs. 60,000; Inventory: Rs. 40,000;**

**Fixed assets: Rs. 60,000; Total assets: Rs. 1,60,000;**

**Current debt: Rs. 24,000; LT debt: Rs. 36,000;**

**Owner's Equity: Rs. 1,00,000)**

31). From the following summarised Balance Sheets of A. Ltd. as on 31<sup>st</sup> December 2003 and 2004, prepare a Statement showing the Sources and Applications of Funds and the schedule showing the Working capital for the year ended 31<sup>st</sup> December 2004.

**Additional Information:**

- i. Investments costing Rs. 16,000 were sold during the year 2004 for Rs. 17,000
- ii. Provision for taxation made during the year was Rs. 18,000
- iii. During the year, a part of the Fixed Assets costing Rs. 20,000 were sold for Rs. 24,000. The profit was included in the Profit and Loss Account
- iv. Dividend paid during the year amounted to Rs. 80,000.

**NOTES**

**(Ans: Increase in Working capital : Rs. 7,24,000. Total of Fund flow Statement Rs. 8,40,000. Fund from operation Rs. 2,59,000)**

32). From the following Balance Sheets of X Ltd. on 31<sup>st</sup> December 2003 and 2004, you are required to prepare:

- i. A Schedule of Changes in Working Capital
- ii. A Fund flow Statement.

Liabilities	2003 Rs.	2004 Rs.	Assets	2003 Rs.	2004 Rs.
Share capital	1,00,000	1,00,000	Goodwill	12,000	12,000
General Reserve	14,000	18,000	Buildings	40,000	36,000
Profit & Loss A/c	16,000	13,000	Plant	37,000	36,000
Sundry Creditors	8,000	5,400	Investments	10,000	11,000
Bills Payable	1,200	800	Stock	30,000	23,400
Provision for Taxation	16,000	18,000	Bills Receivable	2,000	3,200
Provision for Doubtful Debts	400	600	Debtors	18,000	19,000
			Bank	6,600	15,200
	1,55,600	1,55,800		1,55,600	1,55,800

The following information has also been given:

- i. Depreciation charged on plant was Rs. 4,000 and on Buildings Rs. 4,000.
- ii. Provision for taxation of Rs. 19,000 was made during the year 2004.
- iii. Interim dividend of Rs. 8,000 was paid during the year 2004.

**(Ans: Increase in Working Capital Rs. 7,000. Total of Fund flow Statement Rs. 36,000,**

**Fund from operation Rs. 36,000)**

33). From the following Balance Sheets of Sekhar Ltd., prepare a statement of sources and application of funds and schedule of changes in working capital for 1986.

## NOTES

## Balance Sheets

Liabilities	1985 Rs.	1986 Rs.	Assets	1985 Rs.	1986 Rs.
Share capital	1,00,000	1,25,000	Land	1,00,000	95,000
General Reserve	25,000	30,000	Machinery	75,000	84,500
Profit & Loss A/c	15,250	15,300	Inventories	50,000	37,500
Bank Loan	35,000	-	Debtors	40,000	32,000
Creditors	75,000	67,500	Cash	250	300
Provision for taxation	15,000	17,500	Bank	-	4,000
			Goodwill	-	2,000
	2,65,250	2,55,300		2,65,250	2,55,300

Additional information:

- Dividend of Rs. 11,000 was paid during 1986.
- Depreciation on plant written off in the year 1986 was Rs. 7,000
- A Provision for income tax Rs. 16,500 was made during the year.

**(Ans: Decrease in working capital: Rs. 8,950; Funds from operations : Rs. 44,550; Sources : Rs. 69,550; Applications: Rs. 78,500)**

**(Hint: Bank loan, provision for taxation and proposed dividend are treated as non-current items)**

34). Prepare Funds Flow Statement from the data given below:

Details	1.1.92	31.12.92	Details	1.1.92	31.12.92
Cash	40,000	44,400	Capital	35,000	43,500
Sundry Debtors	10,000	20,700	Debentures	22,000	22,000
Stock	15,000	15,000	Less:	(-2,000)	(-1,800)
Land	4,000	4,000	Discount on debentures		
Buildings(at cost)	20,000	16,000	Retained earnings	15,000	19,500
Plant (at cost)	15,000	17,000	Creditors	30,000	32,000
Patents	1,000	900			
Less:	(-5,000)	(-2,800)			
Accumulated depn.on plant & Buildings					
	1,00,000	1,15,200		1,00,000	1,15,200

**NOTES**

- a). Income for the period Rs. 10,000.  
 b). Depreciation issue of shares, cash dividends Rs. 2,000 and stock dividends Rs. 3,500 were declared. A building that cost Rs. 4,000 which had a book value of Rs. 1,000 was sold for Rs. 1,400.

(Ans: Increase in working capital: Rs. 13,100;

Funds from operations: Rs. 10,700;

Sources of funds: Rs. 17,100;

Applications: Rs. 4,000)

35).

**Balance Sheet of Ganesh Mills Ltd.,**

Liabilities	1992 Rs.	1993 Rs.	Assets	1992 Rs.	1993 Rs.
Equity share capital	3,00,000	4,00,000	Building	2,50,000	3,00,000
10% redeemable pref. share capital	2,00,000	-	Machinery	3,00,000	3,20,000
Capital redemption reserve	-	1,00,000	Furniture	20,000	18,000
Reserve fund	2,00,000	1,20,000	Investments	1,00,000	1,50,000
Share premium	30,000	30,000	Stock	3,00,000	2,50,000
P & L a/c	1,20,000	1,80,000	Debtors	1,40,000	2,00,000
12% debn.	2,00,000	3,00,000	Cash at bank	20,000	32,000
Creditors	80,000	1,40,000			
	11,30,000	12,70,000		11,30,000	12,70,000

The following transactions took place during the year 1993:

- a). Preference shares were redeemed at 10% premium.  
 b). Rs. 20, 000 was transferred to reserve fund from P & L a/c.  
 c). Investments (book value Rs. 40,000) were sold for Rs. 70,000.  
 d). Depreciation provided on Building, Machinery and furniture Rs. 20,000; Rs. 30,000 and Rs. 2,000 respectively.  
 e). Dividends paid Rs. 50,000 and income tax paid Rs. 45,000.

Prepare a funds flow statement showing changes in working capital.

(Ans: Decrease in working capital: RS. 38,000;

FFO : RS. 2,17,000; Sources of funds: RS. 4,87,000;

Applications: Rs. 5,25,000)

(Dividend, income tax and investments are treated as non-current liabilities)

**NOTES**

36). Following are the comparative balance sheets of Indian Paints Ltd., for the year ended 31<sup>st</sup> December 2008 and 31<sup>st</sup> December 2009:

Liabilities	2008 Rs.	2009 Rs.	Assets	2008 Rs.	2009 Rs.
Prov. For doubtful debts	2,000	3,000	Cash	43,000	58,000
Accum. Depn:			Prepaid exp.	2,000	2,000
Machinery	3,000	7,500	Debtors	80,000	90,000
Buildings	12,000	18,000	Stock	32,000	40,000
Creditors	33,000	40,000	Investments (long term)	50,000	30,000
Outstanding expenses	3,500	4,500	Machinery at cost	25,000	40,000
Debentures	40,000	35,000	Buildings at cost	75,000	90,000
Equity share capital	2,00,000	2,00,000	Land	10,000	10,000
P&L A/c	23,500	52,000			
	3,17,000	3,60,000		3,17,000	3,60,000

Additional Information:

- i. Dividend paid during 2009 Rs. 26,500
- ii. Investments costing Rs. 20,000 were sold in 2009 for Rs. 25,000
- iii. Machinery costing Rs. 5,000 on which Rs. 1,000 depreciation has been accumulated, was sold for Rs. 6,000 in the year 2009.
- iv. The provision for doubtful debts charges to profit was Rs. 1,500.

Prepare cash flow statement for the year 2009.

**(Ans: CFO : Rs.50,500; Total of CFS: Rs. 1,24,500)**

37). From the following information you are required to prepare a cash flow statement of ABC Ltd., for the year ended 31<sup>st</sup> December 2007:

**NOTES****Balance Sheet**

	2006 Rs.	2007 Rs.
<b>Liabilities:</b>		
Share capital	70,000	70,000
Secured loans(repayable 2008)	-	40,000
Creditors	14,000	39,000
Tax payable	1,000	3,000
P & L A/c	7,000	10,000
	92,000	1,62,000
<b>Assets:</b>		
Plant and Machinery	50,000	91,000
Inventory	15,000	40,000
Debtors	5,000	20,000
Cash	20,000	7,000
Prepaid general expenses	2,000	4,000
	92,000	1,62,000

**Profit and Loss Account for the year ended 31<sup>st</sup> December 2007**

Particulars	Rs.	Particulars	Rs.
To Opening stock	15,000	By Sales	1,00,000
To Purchases	98,000	By Closing stock	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/f	7,000
To Balance c/d	10,000	By Net profit b/d	4,000
	11,000		11,000

(Ans: Cash outflow due to operations: Rs. 3,000;

Total of CFS: Rs. 60,000)

**NOTES**

38). Prepare a Cash Flow Statement from the following Balance Sheet of Akash Ltd. :

Liabilities	2001 Rs.	2002 Rs.	Assets	2001 Rs.	2002 Rs.
Eq. Sh. Capital	300	400	Goodwill	115	90
8% Redeemable Pref. sh. Capital	150	100	Buildings	200	170
General Reserve	40	70	Plant	80	200
Profit & Loss A/c	30	48	Debtors	160	200
Proposed Dividend	42	50	Stock	77	109
Creditors	55	83	Bills Receivable	20	30
Bills Payable	20	16	Cash in hand	15	10
Provision for tax	40	50	Cash at bank	10	8
	677	817		677	817

Additional information:

- Depreciation of Rs. 10,000 and Rs. 20,000 have been charged on plant and buildings account respectively in 2002.
- An interim dividend of Rs. 20,000 has been paid in 2002.
- Income tax of Rs. 35,000 was paid in 2002.

**(Ans: CFO: Rs. 1,60,000; Total of CFS: Rs. 2,95,000;**

**Sale of buildings: Rs. 10,000)**

39). From the following balances you are required to calculate cash from operations:

	December 31	
	2003 (Rs.)	2004 (Rs.)
Profit & Loss Account Balance	25,000	1,55,000
Debtors	45,000	42,000
Creditors	20,000	26,000
Bills receivable	12,000	15,000
Prepaid expenses	1,600	1,400
Bills payable	18,000	16,000
Outstanding expenses	1,200	1,600
Outstanding income	800	900
Income received in advance	250	300

**(Ans: Rs. 1,34,550)**

40). From the following condensed Balance Sheets of X Ltd., for the year ending 31<sup>st</sup> December 2003 and 31<sup>st</sup> December 2004, make out a Cash Flow Statement for 2004.

## NOTES

Liabilities	2003	2003	Assets	2003	2004
Share Capital:					
Equity shares	2,00,000	2,50,000	Goodwill	50,000	45,000
9% Pref. Shares	60,000	40,000	Land & Buildings	80,000	55,000
Capital Reserve	-	10,000	Plant & Machinery	90,000	1,60,000
General Reserve	15,000	20,000	Furniture	12,000	10,000
Profit & Loss a/c	25,000	40,000	Trade Investment	10,000	45,000
Sundry Creditors	28,000	52,000	Sundry Debtors	32,000	25,000
Bills Payable	8,000	10,000	Stock	64,000	45,000
Outstanding expenses	4,000	3,000	Bills Receivable	10,000	35,000
Proposed Dividend	18,000	25,000	Cash	10,000	25,000
Provision for Taxation	20,000	24,000	Bank	15,000	26,000
			Preliminary expenses	5,000	3,000
	3,78,000	4,74,000		3,78,000	4,74,000

### Additional Information:

1. An interim dividend of Rs. 10,000 has been paid in 2004.
2. Rs. 2,000 has been received as dividend on trade investments
3. A piece of land has been sold out in 2004 and remaining has been evaluated, profit on sale and revaluation being transferred to Capital Reserve.
4. Depreciation on Plant and Machinery has been written off Rs. 15,000 in 2004 and no depreciation has been charged on land and buildings.
5. A machinery was sold for Rs. 18,000 (book value being Rs. 20,000) and no furniture has been sold during the year 2004

**(Ans: Cash Operating Profit: Rs. 1,06,000)**

# NOTES

## 1.2.43 Text Books for the Chapter

- 1) T.S. Reddy, Y.Hari Prasad Reddy, “Management Accounting”, Margham Publications, 2008.
- 2) S.N. Maheswari, S.K.Maheswari, “Accounting for Management”, Vikas Publishing House Pvt. Ltd, 2006.
- 3) M.A.Sahaf, “Management Accounting – Principles and Practice”, Vikas Publishing House Pvt. Ltd. 2006.

## 1.2.44 References for the Chapter

- 1) R.S.N.Pillai and Bagavathi, “Management Accounting”, S. Chand & Co Ltd., New Delhi, 2008.
- 2) Dalston L. Cecil and Jenitra L. Mervin, “Management Accounting”, Learntech Press, 2008.
- 3) S. Peer Mohammed, S.A.N. Shazuli Ibrahim, “ Management Accounting”, Pass Publications, 2007.
- 4) V.S.Gupta, Pankaj Kothari, “Accounting for Managers”, Frank Bros. Pvt. Ltd., New Delhi, 2004.

## UNIT-II

### COST ACCOUNTING AND MANAGEMENT ACCOUNTING

#### 2.1 COST ACCOUNTING

##### 2.1.1 Introduction

Financial Accounts are prepared to meet the diverse information needs of various interested parties including the managers of an organisation. Accounts prepared in common to meet divergent needs of different stakeholders, can at best be only general in nature. It will not be of much help to the managers who require detailed data on a continuous basis to exercise control over the operations of an organisation.

Cost Accounting has been evolved to supply Management with costing information for planning, ascertaining, controlling and reducing the cost of manufacturing operations.

##### 2.1.2 Learning Objectives

This chapter will enable the reader to

- a) Comprehend what cost accounting is all about
- b) Understood the methods and techniques of costing
- c) Assimilate the various concept and classification of costs
- d) Appreciate the latest innovations in Costing:- Activity Based Costing, Target Costing, Value Chain
- e) Absorb the meaning of cost volume- Profit analysis and related concepts
- f) Understand the meaning and application of standard costing system.

##### 2.1.3 Accounting for Manufacturing Operations

Organisations run for profit may be broadly classified into

- i. Trading organisation
- ii. Manufacturing concern
- iii. Service rendering organisation

## NOTES

In the case of manufacturing and service rendering organisations, one need to keep a close watch over cost of production and rendering of services. Such cost, in turn, depends upon the volume of operation. Cost accounting is concerned with accounting for cost of manufacturing and rendering of services.

### 2.1.4 Cost, Costing, Cost Accounting and Cost Accountancy

**COST:-** According to Institute of Cost and Management Accountants (I.C.M.A.), now known as Chartered Institute of Management Accountants (C.I.M.A.), Cost is the amount of expenditure ( actual or notional ) incurred on, or attributable to, a specified thing or activity.

**COSTING: -** C.I.M.A. has defined costing as the ascertainment of costs. Such cost ascertainment is done by various methods and techniques.

**COST ACCOUNTING:-** According to C.I.M.A., it is “The process of accounting for cost from the point at which expenditure is incurred or committed to the establishment of its ultimate relationship with cost centres and cost units. In its widest usage it embraces the preparation of statistical data, the application of cost control methods and the ascertainment of the profitability of activities carried out or planned.”

**COST ACCOUNTANCY: -** C.I.M.A. defines cost accounting as, “The application of costing and cost accounting principles, methods and techniques to the science, art and practice of cost control and the ascertainment of profitability. It includes the presentation of information derived there from for the purpose of managerial decision making.” As per this definition it includes costing, cost accounting, budgetary control, cost control and cost audit.

Though the U.K. Costing literature distinguishes cost accounting from cost accountancy, U.S. Literature does not point out any difference between these two. In Practice, though the terms costing, cost accounting and cost accountancy are defined distinctly, they are often used inter-changeably.

### 2.1.5 Methods and Techniques of Costing

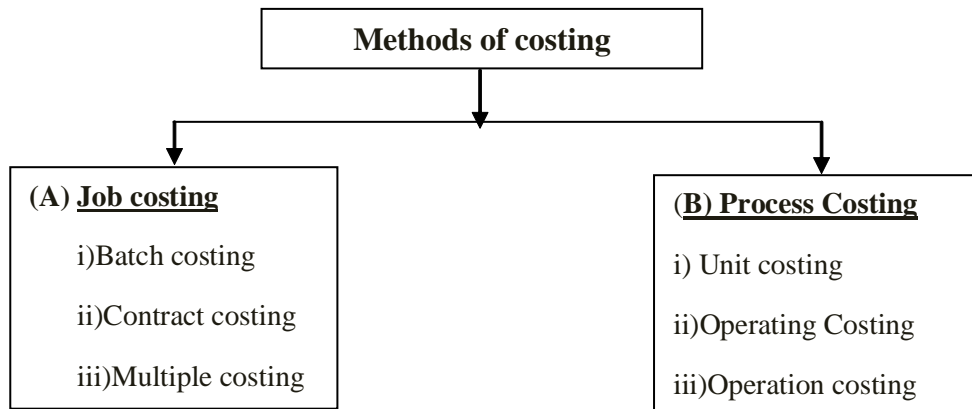
Costing is concerned with ascertainment of costs. It involves the method of collection and presentation of dates and the type of costs ascertained and used.

#### METHODS OF COSTING:-

The Method of collecting and presenting cost data depends upon the nature of product [tangible and intangible, i.e. Services], and method of production. Some products are manufactured according to customers' specifications. Hence, each product is unique and distinct from others. A few are manufactured continuously, like chemicals, oil, etc. through a sequence of operations [i.e. Processes]. In case of service industries like transport, hospital, bank, etc., costs are ascertained according to activities performed.

Accordingly, there are basically two methods of costing with variants within each. These are shown as follows:-

### Methods of costing



**A. JOB COSTING:** This is used by those companies which carry out production against customers' orders and their specifications. Example of concerns using job costing are house building, machine building, road contracting, etc.

- i. Batch costing: Here, a group of identical or similar products are treated as a job. Costs are ascertained for each batch and ascertained for each batch and divided by the total quantity in the batch to arrive at unit cost of each item. This is followed in the case of toy-making, biscuit factories, etc.
- ii. Contract costing: Each work is of long duration and is carried out as per Customers specifications. A contract is treated as a cost unit, and cost is ascertained for each contract separately.
- iii. Multiple or Composite Costing: This method is used in those cases where production involves highly complex process, like ship-building, aero planes etc. All the required components are produced separately and then assembled. Costs are ascertained for each component and then totaled to arrive at the total cost of the product.

**B. PROCESS COSTING:** This is used in those companies where production is carried out on a continuous basis. It is most often used in industries like chemicals, oils, cement, mining etc. either the cost is ascertained at each stage or operation, or the total cost is averaged for the number of units produced.

Following are the variance of process costing.

- i. Unit or single output costing: It is applicable where a single item is produced in mass through a series of processes. The total cost is divided by the total number of units produced to arrive at the cost per unit. Examples are steel works, mines, brick-fields, flour mills, etc.

# NOTES

- ii. Operating costing: This is suitable to those organisations which render services like transport, hospital, power-house etc. Cost of providing and rendering a service is calculated by dividing the total cost by the units of services rendered. Units are usually passenger-mile, tonne-mile, kilowatt hour, etc.
- iii. Operation costing: It is a method employed to find out the cost of each operation where a series of operations are performed in the completion of a product. Examples are cutting, Shearing, Boring, etc.

## TECHNIQUES OR TYPES OF COSTING

Methods of costing signify whether job or process costing is being used without indicating the type of costs [Historical, Standard, and Full or Marginal costs] used. Techniques or types of costing signify the type of cost used in each of the above two costing methods. Following are the techniques of costing:

- i. Historical costing : It refers to ascertainment of costs after they are incurred.
- ii. Standard costing: Standard costs are pre-determined costs. Standards are fixed for each element of costs, actual are compared with standards and deviations, if any, are analysed to find out their causes, so that remedial action can be taken.
- iii. Absorption or full costing: Here, all costs, both fixed and variable are charged to jobs and processes.
- iv. Variable or Marginal costing: Under this method, any variable costs are charged to products or jobs, and fixed costs are recovered from contribution [i.e. the difference between sales and variable cost of sales].
- v. Uniform costing: It refers to use by several undertakings of the same costing principles and/or practices.

### 2.1.6 Cost Accounting System

It refers to an accounting system followed to record cost data, accumulate costs, ascertain cost of products or jobs and prepare cost information

Based on the two basic methods of costing – job costing and process costing – to ascertain costs, the costing system followed by industries fall into two compartments:

- i. Job Order Costing System
- ii. Process Costing System

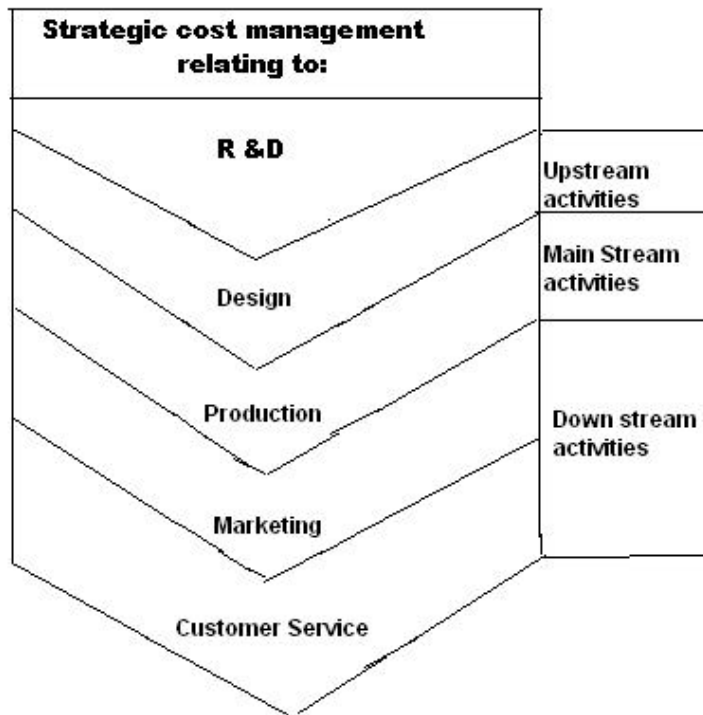
Within each of the above two categories, different techniques of costing can be ascertained using standard costing, marginal costing or absorption costing technique. So is the case with the ascertainment of process cost.

### 2.1.7 Costing and the Value Chain

Generally, the functions of an organisation can be classified as (i) Research and Development (ii) Design (iii) Production (iv) Marketing and (v) Customer Service. These operations together constitute the value chain of a firm as shown below.

## COSTING AND VALUE CHAIN OF A FIRM

## NOTES



A value chain contains a sequence a well coordinated and integrated business functions in which usefulness is added in each operation so as to enhance the utility of the product or service to the customer. All non value creation activities are eliminated.

Value chain is an integral part of storage cost management. It highlights the strategic cost issues and concerns regarding each of the business functions in order to develop superior cost strategies.

A cost accountant accumulates and analyses the cost information relating to each of the constituent parts in the value chain, and supplies them to the functional managers for well informed and sound cost decision.

### 2.1.8 Emerging Innovative Concepts in Costing

In the changing global, economic and industrial scenario, cost accounting is growing in its importance, scope and applications. This has led to the development innovative concepts. These are discussed below:-

**(A) Activity Based Costing:** It is a system that focuses on the activities involved in producing a product or service, was the cost of these activities as building blocks for compelling the cost of the product or service. It is a latest technique used for apportionment of overhead costs over products produced in different batches consuming activities and inputs in different proportions.

# NOTES

The total overhead costs of an organisation are identified with each activity which causes the overhead cost. Then overhead cost per unit of each activity is ascertained. Overhead cost can now be assigned to jobs or products on the basis of number of activities required for completion.

The concept of Activity Based Costing is illustrated below:-

### Illustration 1:

A company produces two products A and B using 30000 direct labour hours each year as follows:

Product	units	Direct labour hours	Total hours
A	5000	2	10000
B	10000	2	20000
		<b>Total</b>	30000

The company's overhead cost (supervision cost) are Rs.60000 per year and analysis of the activity reveals the following:

Activity	Traceable cost Rs.	No. of events or transaction		
		Total	A	B
Supervision	60000	3000	2000	1000

You are required to compute overhead cost per unit for each product using :

- Direct Labour Hour method for absorption of overhead
- ABC Technique for absorption of overhead cost
- Comment on the results

Product	Overhead cost per unit
A	2 hrs * Rs.2 per hour = Rs.4
B	2 hrs * Rs.2 per hour = Rs.4

### **Solution**

- Computation of overhead cost per unit using Direct Labour Hour Rate method:

$$\frac{\text{Overhead cost}}{\text{Direct Labour Hours}} = \frac{\text{Rs.60000}}{30000\text{hrs}} = \text{Rs.2 per hour}$$

ii) Computation of overhead cost per unit using ABC : (a)

Activity	Traceable cost (a) Rs.	Total events or transaction (b)	Rate per event or Transaction a / b
Supervision	60000	3000	Rs.20 per hour

(b)

Particulars	A		B	
	No. of events	Amount Rs.	No. of events	Amount Rs.
Supervision at Rs.20 /-per event	2000	40000	1000	20000
Total overhead cost (a)	-	40000	-	20000
No. of units produced (b)	-	5000	-	10000
Overhead cost per unit a/b		8		2

iii) **Comments**

If the company adopts direct labour hour method for absorption of overhead costs, the amount of overhead charged per unit will be Rs.4 for each product, in spite of the fact product A requires double the supervision of product B.

Therefore it would be more appropriate to use ABC to prevent any variation in assigning costs to products.

**B) Target costing:** It involves setting a target cost by subtracting a target profit margin from a competitive price and then producing the product within the target cost.

Target costing is a disciplined process for determining and realizing a total cost at which a proposed product with specified functionality must be produced to generate the desired profit at its anticipated selling price in the future.

Target costing involves the following steps:

- i. Determine the customer needs and the features that should go in to the proposed product to satisfy the customer's needs.
- ii. Ascertain the price at which such product can be sold in the market.
- iii. Decide on the desired profit margin to be earned.
- iv. Subtract the desired profit from the anticipated selling price to arrive at the target cost. Thus,  
Target cost = Target selling price – Target profit.
- v. Produce the product within the target cost with the predetermined features.

# NOTES

After the introduction of the product, prices may decline due to competitive forces. In order to maintain the desired profit margin, costs have to be reduced. This is done through value engineering. Value engineering seeks to find creative ways to reduce costs. Thus, target costing constitutes an integral part of strategic management.

In the case of traditional cost-plus approach, by the time a product reaches the production stage, most of the cost is locked in, and it becomes quite difficult to effect substantial cost reduction subsequently. With declining sale price on one hand, and the company finding it difficult to reduce cost on the other, profit margin continues to decline and may eventually wane out. Thus, traditional cost plus approach becomes a recipe for market failure.

Instead of building a product and then trying to sell it, companies have started to focus on what they can sell at what price, and then produce the product within the desired cost so as to achieve the target profit. This is done through target costing. It grooves in well with the recent emphasis on customer-focused philosophy.

## 2.1.9 Classification of Costs

Cost classification is the process of grouping costs according to some common Characteristics.

Following are the various ways of classifying cost:-

### 1) Classification by Nature

Basically there are three elements of cost: Material, Labour and Expenses.

They are further classified as shown below:-

$$\begin{array}{rcl}
 \text{(a) Material} & = & \text{Direct Material} + \text{Indirect Material} \\
 + & & + \\
 \text{(b) Labour} & = & \text{Direct Labour} + \text{Indirect Labour} \\
 + & & + \\
 \text{(c) Expenses} & = & \text{Direct Expenses} + \text{Indirect Expenses} \\
 \parallel & & \parallel \\
 \text{Total cost} & = & \text{Prime cost} + \text{Overhead cost}
 \end{array}$$

Factory overhead	Office and administrative overhead	Selling and distribution overhead
1. Indirect Material	1. Indirect Material	1. Indirect Material
2. Indirect Labour	2. Indirect Labour	2. Indirect Labour
3. Indirect Expenses	3. Indirect Expenses	3. Indirect Expenses

## NOTES

**(a) Material:** It is the basic raw material from which a product is manufactured. Such material can be further divided in to:

- i. **Direct Material:** These are materials which can be conveniently and economically traced to the finished product and also becomes an integral part of the finished product. Examples are, materials purchased for a specific job, primary packing materials like cardboard boxes, wrappers etc.
- ii. **Indirect Material:** Those which cannot be conveniently and economically traced to the finished product are called indirect materials, examples are consumable stores, oil lubricants etc.

**(b) Labour:** Those are the amount paid for the human effort involved in converting the raw materials into finished products.

- i. **Direct Labour:** It is the labour which take an active and direct part in the production process. Examples are wages paid to lathe operators wages paid to assemblers.
- ii. **Indirect Labour:** It refers to the labour which indirectly help the production process Examples are wages paid to time keepers.

**(c) Expenses:** Costs incurred besides material and labour are called expenses.

Particulars	Factory Overhead	Office and Administration Overhead	Selling and Distribution Overhead
Indirect Material	Lubricants, Consumable Stores	Printing and Stationary items, Brooms	Packing Material Printing and Stationary Items
Indirect Labour	Factory Managers Salary, Time keeper's wages	Office Managers Salary, Salary of Clerks	Sales Managers Salary, Salesmen Salary
Indirect Expenses	Factory Rent, Factory Lighting	Office Rent , Office Lighting	Advertisement Expenses, Insurance

- i. **Direct Expenses:** These are those expenses apart from direct material and direct labour which can be conveniently and specifically assigned to a product or job. Examples are costs of special moulds, hiring special machinery for a special job.
- ii. **Indirect Expenses:** These refers to those expenses other than Indirect material and I indirect labour which cannot be conveniently and economically traced to the finished product. Examples are factory rent, lighting charges.

**Total Cost:** It is the summation of all the three elements of cost, namely, material, labour and overhead.

# NOTES

**Prime Cost:** The total of direct material, direct labour and direct expenses is called prime cost.

**Overhead:** The total of all indirect material, indirect labour and indirect expenses is called overhead. This overhead can be further divided into factory, Administration and Selling & Distribution Overhead. Each of these further contains indirect material, indirect labour and indirect expenses as shown below.

## (2) Classification According to Variability

Costs can also be classified as Fixed, Variable and Mixed Cost.

**Fixed Cost:** Costs which remain constant for a given period of time or activity in spite of wide fluctuations in output or activity are called Fixed Cost. Examples are Rent and Salary

**Variable Cost:** Those are the cost which varies in direct proportion with the changes in output. Examples are cost of direct labour.

**Mixed Cost:** This is a cost which is partly fixed and partly variable cost. Examples are workers Earnings Company of fixed salary and incentive part which vary with output achieved.

## (3) According to Association with the Product

Costs can be product Cost and Period Cost

**Product Cost:** Costs that are included in the cost of producing a product are called Product Cost. It contains direct material, direct labour, direct expenses and factory overhead.

**Period Cost:** Costs which are not associated with production are called Period Costs. They are treated as an expense of the period during which they occur. Examples are Administrative Cost, salaries.

## (4) According to degree of Control

Costs can also be classified as controllable and uncontrollable costs.

**Controllable Costs:** These are those costs which can be influenced by the action of a specific member of an organisation.

**Uncontrollable Costs:** Costs which cannot be so influenced is called uncontrollable costs. Cost controllable at one level may be uncontrollable at another level. Cost incurred in a machine shop can be influenced by the foreman in charge of the machine shop. Moreover, in the long run all costs are controllable.

**(5) Other Classification**

These include joint cost and common cost.

**Joint cost:** Joint cost is applicable in the case of process industries where two or more products are produced simultaneously in the same process using a common raw material. The cost incurred up to the separation or split-off point is called Joint cost. For instance, during the refining process of crude oil, a number of products like kerosene, waste, waltar, fuel oil, etc are produced. Joint costs are appointed to different products so produced jointly on some suitable basis.

**Common cost:** According to National Association of Accountants, U.S.A., common costs refers to “cost of services employed in the creation of two or more outputs which is not allocable to those outputs on a clearly justified basis. For instance, rent and lighting charges are common to all the departments in the factory. Common costs are not the result of any joint manufacturing compulsion or the use of any common raw material. They are incurred in addition to joint cost.

**2.1.10 Cost Unit and Cost Centre**

**COST UNIT:-** In cost accounting, cost has to be expressed in terms of some unit. Such quantity upon which cost can be conveniently expressed is called cost unit. According to C.I.M.A, “cost unit is a unit of quantity of product, service or Time in relation to which costs may be ascertained or expressed.”

Example of cost units are, per tone of coal, per passenger kilometer, per tone of steel made, etc.

**COST CENTRE :-** According to C.I.M.A, cost centre is a location, person or item of equipment (or group of these) for which costs may be ascertained and used for the purpose of cost control”. The whole factory may be conveniently divided into different units for costing purposes. Each unit may consists of a department or closely associated department combined together as one unit for costing purpose, equipment or person(s). For instance, in a laundry division, activities such as collecting, marketing and washing of clothes may be considered as separate cost centre.

**2.1.11 Cost Sheet**

Cost sheet is a statement prepared at periodic intervals, which shows the total cost classified under proper heads in a logical manner. According to I.C.M.A., “cost sheet is a document which provides for the assembly of the estimated detailed cost in respect of a cost centre or unit “.

For easy comprehension, cost sheet can be studied as:

- A. Cost sheet without opening and closing inventory
- B. Cost sheet with opening and closing inventory

Specimen of both the above cost sheets are given below

**NOTES****SPECIMEN COST SHEET (with out opening & closing)**

	Total cost	Cost per unit
Direct Materials	xxx	xx
Direct Labour	xxx	xx
Direct Expenses	<u>xxx</u>	<u>xx</u>
<b>PRIME COST</b>	xxx	xx
<b>Add:</b> Factory overheads	<u>xxx</u>	<u>xx</u>
<b>FACTORY or WORKS COST</b>	xxx	xx
<b>Add:</b> Administration overheads	xxx	xx
<b>COST OF PRODUCTION</b>	xxx	xx
<b>Add:</b> Selling and distribution overheads	<u>xxx</u>	<u>xx</u>
<b>TOTAL COST OR COST OF SALES</b>	xxx	xx
<b>Add:</b> profit	<u>xxx</u>	<u>xx</u>
<b>SALES</b>	<u>xxx</u>	<u>xx</u>

**SPECIMEN COST SHEET**

With opening and closing inventory

		Total cost
Opening stock of raw materials	xxxxx	
<b>Add:</b> Purchase of Raw materials	xxxxx	
Carriage on purchases	<u>xxxxx</u>	
	xxxxx	
<b>Less:</b> Closing stock of raw materials	<u>xxxxx</u>	
Direct Materials Consumed		xxxxx
Direct Labour		xxxxx
Direct Expenses		<u>xxxxx</u>
<b>PRIME COST</b>		xxxxx
<b>Add:</b> Factory on cost / Factory Overheads	xxxxx	
<b>Add:</b> Opening stock of work- in- progress.	<u>xxxxx</u>	
	xxxxx	
<b>Less:</b> Closing stock of work- in- progress.	xxxxx	
Sale of factory scrap	<u>xxxxx</u>	<u>xxxxx</u>
<b>FACTORY COST/ WORKS COST</b>		xxxxx
<b>Add:</b> Administration overheads		<u>xxxxx</u>
<b>COST OF PRODUCTION</b>		xxxxx
<b>Add:</b> Opening stock of finished goods	xxxxx	
<b>Less:</b> Closing stock of finished goods	xxxxx	xxxxx
<b>COST OF GOODS SOLD</b>		xxxxx
<b>Add:</b> Selling and distribution overheads		xxxxx
<b>COST OF SALES OR TOTAL COST</b>		xxxxx
<b>Add:</b> profit		<u>xxxxx</u>
<b>SALES</b>		<u>xxxxx</u>

**NOTES****Illustration: 2**

The accounts of a Manufacturing company for the year ended 31<sup>st</sup> December 2004 show the following. Prepare a cost sheet.

	Rs.		Rs.
Factory office salaries	6,500	Materials Purchased	1,85,000
General Office Salaries	12,600	Traveling Expenses	2,100
Carriage Outwards	4,300	Traveller's salaries &	7,700
Carriage on Purchase	7,150	Commission	
Bad Debts written off	6,500	Depreciation:	
Repairs of plant		Plant, Machinery	
Machinery and Tools	4,450	& Tools	6,500
Rent, rates and		-Furniture	300
insurance		Directors Fees	6,000
-Factory	8,500	Gas and Water –	
-Office	2,000	factory	1,200
Sales	4,61,100	- Office	400
Stock of Materials		Manager's Salary (3/4	
-31 st Dec 2003	62,800	Factory and ¼ office)	10,000
-31 st Dec.2004	48,000	General Expenses	3,400
Income Tax	500	Dividend	1,000
		Productive Wages	1,26,000

**COST SHEET**

**For the period ended 31<sup>st</sup> December 2004**

	Rs	Rs
Opening Stock of Raw Materials	62,800	
Add: Purchases	1,85,000	
Add : Carriage	7,150	
	2,54,950	
Less : Closing Stock of raw Material	48,000	
Value of material used		2,06,950
Productive wages		1,26,000

**NOTES**

Prime cost		3,32,950
Factory Overheads (factory on Cost)		
Factory Office Salaries	6,500	
Repairs of plant and machinery	4,450	
Factory Rent,Rates,taxes and Insurance	8,500	
Deprecation of plant,Machniery & Tools	6,500	
Factory Gas, and Water	1,200	
Manager's salary (3/4 of Rs.10,000)	7,500	34,650
Factory Cost of Works cost		3,67,600
Administration Overheads:		
General Office salaries	12,600	
Office rent Rates taxes & Insurance	2,000	
Deprecation on Furniture	300	
Director's Fees	6,000	
Office gas and Water	400	
Manager Salary (1/4 of Rs.10,000)	2,500	
General Expenses	3,400	27,200
Cost of production		3,94,800
Selling and Distribution Overheads		
Carriage Outwards	4,300	
Bad Debts	6,500	
Travelling Expenses	2,100	
Travellers Salaries & Commission	7,700	20,600
Total cost		4,15,400
Net Profit (balance Fig)		45,700
Sales		4,61,100

**ILLUSTRATION 2**

The following details have been obtained from the cost records of Adhib Ltd.,

	<b>Rs.</b>
Stock of raw materials (1.1.2005)	75,000
Stock of raw materials (31.12.2005)	91,000
Direct wage	52,500
Indirect wages	2,750
Sales	2,11,000
W.I.P. (1.12.2005)	28,000
W.I.P. (31.12.2005)	35,000
Purchase of raw materials	66,000
Factory rent, rates and power	15,000
Depreciation of plant and machinery	3,500
Expenses on purchases	1,500
Carriage outwards	2,500
Advertising	3,500
Office rent and taxes	2,500
Traveler's wages and commission	6,500
Stock of finished goods (1.12.2005)	54,000
Stock of finished goods (31.12.2005)	31,000

Prepare a cost sheet given the maximum possible break up of costs and profit.

	<b>Rs.</b>	<b>Rs.</b>
Opening stock of Raw materials	75,000	
Add: purchases of RM	66,000	
Expenses on purchases	1,500	
	1,42,500	
Less: Closing stock of RM	91,500	
<b>Raw material consumed</b>		51,000
Direct wages		52,500
<b>Prime Cost</b>		<b>1,03,500</b>
Add: Factory overheads:		
Indirect wages	2,750	
Factory rent, rates and power	15,000	
Depreciation of plant and machinery	3,500	21,250
		1,24,750
Add: Opening work- in-progress		28,000
		1,52,750
Less: closing work-in-progress		35,000

**NOTES**

# NOTES

<b>Work cost</b>		<b>1,17,750</b>
Add: Administration overheads: Office Rent and Taxes		2,500
<b>Cost of production</b>		<b>1,20,250</b>
Add: Opening stock of finished goods		54,000
		1,74,250
Less: Closing stock of finished goods		31,000
<b>Cost of goods sold</b>		<b>1,43,250</b>
Add : selling and Distribution overheads:		
Carriage outwards	2,500	
Advertising	3,500	
Traveller's wages and commission	6,500	12,500
<b>Cost of sale</b>		<b>1,55,750</b>
Profit (Bal.Fig)		55,250
<b>Sales</b>		<b>2,11,000</b>

## COST – VOLUME – PROFIT ANALYSIS (MARGINAL COSTING)

### Marginal Cost

Marginal cost refers to variable cost, consisting of prime cost (direct material, direct labour and direct expenses) and variable overheads.

The Chartered Institute of Management Accountant defines marginal cost as, “the amount at any given volume of output by which aggregate cost are changed, if the volume of output is increased or decreased by one unit”. Thus, if the cost of producing 10 units is Rs.5000 and the total cost of producing 11 units is Rs.5450, then the marginal cost of the 11<sup>th</sup> unit is Rs.450. Marginal cost, in other words, is Variable Cost.

### 2.1.12 Marginal Costing

It is a technique where by only the variable cost are considered while computing the cost of the product. The fixed costs are written off against profits in the period in which they arise.

According to C.I.MA, marginal costing is “ascertainment of marginal costs and of the effect on profit of changes in volume or type of output by differentiating between fixed costs and variable costs”.

From the above, it can be understood that marginal costing involves the following.

- i. Ascertainment of marginal cost.
- ii. Deriving cost volume profit relationship by differentiating between fixed and variable cost.

### 2.1.13 Features of Marginal Costing

- i. Marginal Costing is a technique which can be used with other methods of costing.
- ii. Total cost is divided into fixed and variable costs.
- iii. Fixed costs are excluded from cost of production and are charged to costing profit and loss account.
- iv. Variable costs are considered for cost of production.
- v. Even the inventory is valued at marginal cost.
- vi. Selling price is placed on variable cost plus contribution.
- vii. The profitability is determined on the basis of contribution only.
- viii. Profit is ascertained by deducting fixed costs from contribution.
- ix. Profitability at various levels of activity is ascertained by studying cost volume profit relationship.

### 2.1.14 Advantages of Marginal Costing

- i. Facilitates effective control over cost by dividing the total cost into fixed and variable.
- ii. Assists in making decisions like make or buy, accepting foreign orders at lower prices, selection of profitable product mix, etc.,
- iii. As fixed costs are not absorbed in unsold stock, the question of fictitious profit does not arise.
- iv. Yields better results when combined with standard costing.
- v. Helpful in preparation of flexible budgets.
- vi. With the exclusion of fixed overhead from product cost, valuation of Work-in-progress and finished goods becomes more realistic.
- vii. As the fixed cost are excluded from production cost, the degree of over or under-recovery of overheads is reduced.
- viii. Enables management executives to understand cost-volume-profit analysis by presenting them in the form graphs and charts.

### 2.1.15 Limitations of Marginal Costing

- i. It is difficult to segregate cost into fixed and variable components.
- ii. In the long run all costs, including fixed costs and variable.
- iii. As inventory is valued at marginal cost, in case of loss due to fire, full loss cannot be recovered from the insurance company.

## NOTES

- iv. It is not helpful in organisations where fixed cost is huge in relation to variable cost.
- v. Comparison of two products or jobs cannot be done without considering fixed costs.
- vi. Increasing automation is leading to increase in fixed cost. If fixed costs are ignored, the costing system cannot be effective.
- vii. It can be effective only when combined with standard costing and budgetary control.
- viii. Marginal costing is sales oriented. Production function is not given its due importance.

### Distinction between Marginal Costing and Absorption Costing

<b>Marginal Costing</b>	<b>Absorption Costing</b>
i. Only variable cost is charged to the product.	i Both fixed and variable cost are charged to the product.
ii Closing stock is valued at variable cost	ii Closing stock includes both fixed and variable costs. This shows more profit.
iii Emphasis selling and selling pricing aspects.	iii Lays emphasis on production function.
iv Difference between sales and variable cost is called Contribution.	iv Difference between sales and cost of sales is known as Profit.

### 2.1.16 Meaning of Cost - Volume - Profit - Analysis

The three factors cost, volume and profit are interconnected and dependent on one another. Profit depends upon sales, selling price depends upon cost, and volume of sales depends upon volume of production which in turn is related cost.

Cost – Volume – Profit analysis studies the three variables, namely, cost, volume and profit in order to measure the effect of variations in volume, cost, price and product mix on profits. It helps the management in profit planning.

Cost – Volume- Profit analysis can be studied in two forms:-

- a. Algebraically, through marginal cost equation, or,
- b. Graphically, with the help of Break even charts.

### 2.1.17 Marginal Cost Equation

This shown the relationship between sales costs and profit. It can be expressed as follows:-

$$\text{Sales} = \text{variable cost} + \text{fixed cost} + \text{profit}$$

$$\text{Sales} - \text{variable cost} = \text{fixed cost} + \text{profit}$$

$$\text{Sales} - \text{variable cost} = \text{contribution}$$

$$\text{Contribution} = \text{fixed cost} + \text{profit}$$

Marginal cost equation can be also being expressed in the form of a statement a shown below:- If contribution is more than the fixed cost it results in profit, and vice versa

### 2.1.18 Terms and Concepts Associated wiht Cost - Volume - Profit - Analysis

i) **Sales:-** It refers to the revenue generated by way of selling product

Sales		xxx
Less:- Variable/ Marginal cost		
Direct Material	xxx	
Direct Labour	xxx	
Direct Expenses	xxx	
Variable overhead	xxx	
	Contribution	xxx
Less:- Fixed Cost		xxx
	Profit or Loss	xxx

ii) **Variable Cost:-** It is a cost which varies in direct proportion with the output . It is also known as “Marginal Cost” or “Product Cost”, and consists of direct material, direct labour, direct expenses and variable overhead. While the total variable cost varies, the per unit variable cost remains constant.

iii) **Fixed Cost:-** These cost remain constant and does not vary with the changes in output. They do not depend upon volume of production and sales. They are known as “Period Cost” or “Time Cost”. While the total fixed cost remain constant the per unit fixed cost varies.

iv) **Contribution:-** The excess of sales over variable or marginal cost is called contribution it is also known as “Gross Margin”. Contribution can be calculated as follows:-

$$\text{Contribution} = \text{Sales} - \text{Variable Cost}$$

$$\text{Contribution} = \text{Fixed} + \text{Profit}$$

$$\text{Contribution} - \text{Fixed Cost} = \text{Profit}$$

When contribution is equal to fixed cost, then there is neither profit nor loss. If contribution is less than the fixed cost, there will be a loss. The excess of contribution over fixed cost is called Profit.

## NOTES

**V) Profit – Volume Ratio:-** It is abbreviated as p/v ratio, and read as p.v ratio. This ratio establishes a relationship between contribution and sales as is expressed as a percentage. The formulae for calculating p/v ratio are as follows:-

$$\text{P/v Ratio} = \frac{\text{Contribution} * 100}{\text{Sales}}$$

$$\text{P/v Ratio} = \frac{\text{Change in Profit} * 100}{\text{Change in Sales}}$$

Higher the ratio, higher is the profitability and vice versa. The later formulae is used when two periods' profits and sales are given.

**vi) Key Factor / Limiting Factor:-** Any factor which limits the profits earning capacity of a business by imposing restrictions on the firms operations is called Limiting factor or Key factor or Principal factor or Critical factor. Examples of key factors are shortage of raw materials, shortage of labour, sales volume, etc., In the absence of limiting factor, decision can be on the basis of highest P/v ratio. When limiting factor operates decision should be made on the basis of the highest contribution of the key factor. Thus,

$$\text{Profitability} = \frac{\text{Contribution}}{\text{Key Factor}}$$

**vii) Break Even Point( BEP):-** It is the point at which the total cost equals total revenue. It is a No-Profit No-Loss point. At this point profit is zero. If sales are above break even point, the company makes profit. If sales are below break even point, the firm incurs a loss. Formulae for calculating break even point are given below:-

$$\text{B.E.P(in units)} = \frac{\text{Fixed cost}}{\text{Contribution per unit}}$$

**viii) Margin of Safety (M.O.S):-** It is the difference between actual sales and sales at break even point. Alternatively, sales over and above break even point is called Margin of Safety. It indicates the soundness of the business. Higher the margin of safety, more sound is the business and vice versa.

Margin of safety can be calculated as follows

$$\text{M.O.S} = \text{Actual Sales} - \text{Break Even Sales}$$

$$\text{M.O.S} = \frac{\text{Profit}}{\text{P/v ratio}}$$

$$\text{M.O.S} = \frac{\text{Margin of Safety y x100}}{\text{Total Sales}}$$

### 2.1.19 Break Even Analysis

This can be interpreted in two ways.

In a narrow sense, break even analysis is concerned with the computation of break even point. In this sense, the break even analysis is one of the techniques used in Cost – Volume – Profit or C.V.P analysis.

In a broad sense, it is not only concerned with computation of break even point but also studies the relationship between cost, sales revenue and profit and is used to determine the profit at different levels of activity. Thus in a broader sense it is used synonymously with ‘Cost- Volume-Profit analysis’.

**Break Even Chart:-** It is a graphical representation of Cost-Volume-Profit analysis. It shows the variable cost, fixed cost, sales, break even point, profit or loss at different levels of activity.

According to C.I.M.A, “a break even chart is a chart which shows the profit or loss at various level of activities, the level at which neither profit nor loss is shown being termed as the break even point.

The technique of drawing a break even chart can be understood with the help of the following illustration.

#### Illustration 2

Draw a break even chart and determine the break even point from the following data.

Selling Price per unit	:	Rs.20
Variable cost per unit	:	Rs.10
Fixed Cost	:	Rs.4000

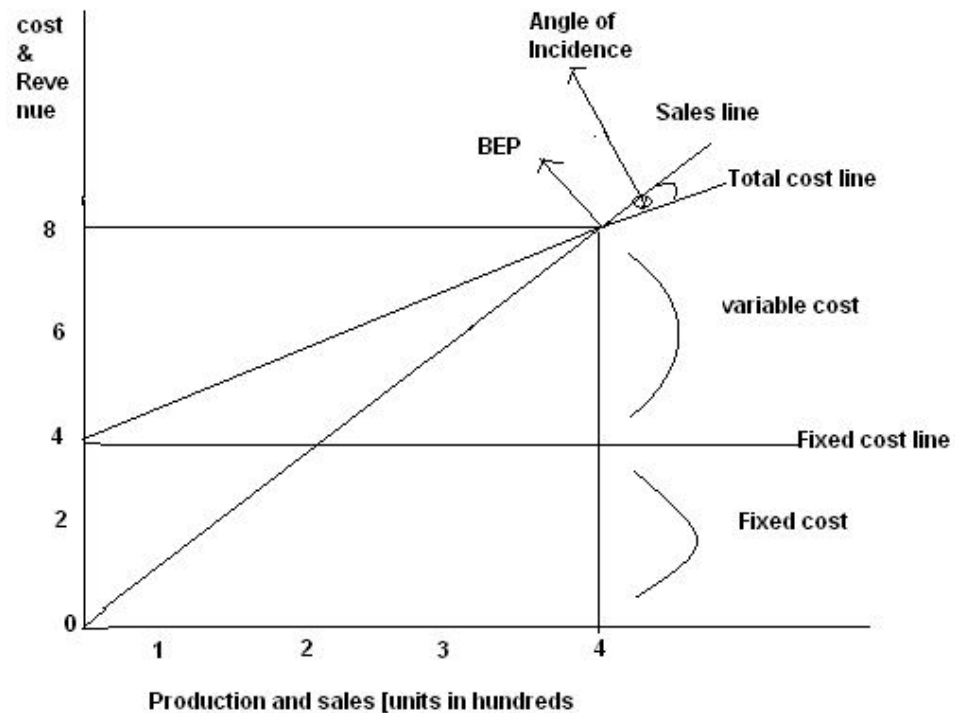
#### Solution

Sales, cost and profit at various assumed levels of activity are given below:-

No of units	Variable cost Rs.	Fixed Cost Rs.	Total Cost Rs.	Sales Rs.	Profit/Loss Rs.
0	0	4000	4000	0	-4000
100	1000	4000	5000	2000	-3000
200	2000	4000	6000	4000	-2000
300	3000	4000	7000	6000	-1000
400	4000	4000	8000	8000	0
500	5000	4000	9000	10000	1000
600	6000	4000	10000	12000	2000

# NOTES

## 2.1.20 Break Even Chart



## 2.1.21 Angle of Incidence

It is the angle formed between sales line and cost line. It indicates the profitability of a concern. Greater the angle of incidence greater is the profitability and vice versa. A high margin of safety and bigger angle of incidence indicates a favorable situation.

## 2.1.22 Assumptions Under Lying Break Even Charts

- i. Total cost can be divided into fixed and variable cost
- ii. Fixed cost remains constant at all levels
- iii. Variable cost vary in direct proportion with output
- iv. Selling price is same at different levels of output
- v. No change in price level
- vi. No change in operating efficiency
- vii. There are no opening and closing stock as all units produced will be sold
- viii. Only one product or sales mix is same

## 2.1.23 Advantages of Break Even Charts

- i. It presents cost, sales and profit or loss at various levels in a simple, easy-to-understand form.
- ii. Helps in ascertaining break even point and margin of safety.

- iii. Acts as a simple but effective tool for cost analysis and cost control.
- iv. They are helpful in profit planning
- v. Helps in forecasting the effect of change in price and profitability.
- vi. Shows cost-volume- profit relationship in a simple way.
- vii. Aids in knowing profit at various levels.

#### 2.1.24 Limitations of Break Even Charts

- i. Fixed cost need not remain constant at all levels
- ii. Variable cost need not necessarily vary with in direct proportion with change in output.
- iii. It is unlikely for the selling price to remain constant
- iv. Production and sales are unlikely to be equal
- v. The analysis ignores several vital factors like, market condition, capital invested, cost of capital, government policy changes, management policy, etc
- vi. Product mix tends to vary in the long run.

#### 2.1.25 Formulae Commonly used for Break Even Analysis (or) Cost Volume Profit Analysis

##### (i) Marginal Cost Equation

$$\begin{aligned} \text{Sales} - \text{Valuable Cost} &= \text{Contribution} \\ \text{Sales} - \text{Valuable Cost} &= \text{Fixed Cost} + \text{Profit} \\ \text{Contribution} &= \text{Fixed cost} + \text{Profit} \end{aligned}$$

##### (ii) P/V Ratio

$$\text{P/V Ratio} = \frac{\text{Contribution}}{\text{Sales}} \times 100$$

$$\text{P/V Ration} = \frac{\text{Change in Profit}}{\text{Change in Sales}} \times 100$$

##### (iii) Break Even Point (BEP)

$$\text{BEP (in Units)} = \frac{\text{Fixed Cost}}{\text{Contribution Per unit}} \text{ (Or) } \frac{\text{Break Even Sales}}{\text{Selling Price Per unit}}$$

$$\text{BEP (in rupees)} = \frac{\text{Fixed Cost}}{\text{P/V Ration}} \text{ (or)}$$

$$\text{Break Even Units} \times \text{Selling Price per unit}$$

**NOTES****(iv) Margin of Safety (MOS)**

$$\text{MOS} = \text{Actual Sales} - \text{Break even sales}$$

$$\text{Mos (in rupees)} = \frac{\text{Profit}}{\text{P/V Ratio}}$$

$$\text{Mos (in units)} = \frac{\text{Profit}}{\text{Contribution Per Unit}}$$

$$\text{Mos Ratio} = \frac{\text{Margin of Safety}}{\text{Total Sales}} \times 100$$

**(v) Sales required for desired profit**

$$\text{Sales units for desired profit} = \frac{\text{Fixed cost} + \text{Desired Profit}}{\text{Contribution per unit}}$$

$$\text{Sales value for desired profit} = \frac{\text{Fixed cost} + \text{Desired profit}}{\text{P/V Ration}}$$

**(vi) Profit from desired sales**

$$\text{Contribution} = \text{Desired sales} \times \text{P/V Ratio}$$

$$\text{Profit} = \text{Contribution} - \text{Fixed cost}$$

**Illustration: 4**

From the following information relating to Palani Bros Ltd., you are required to find out

(a) / V ratio (b) Break even point (c) profit (d) Margin of safety (e) Volume of sales to earn profit of Rs.6,000

Total fixed costs	Rs.4,500
Total variable costs	Rs.7,500
Total sales	Rs.15,000

**Solution****Margin Cost and Contribution statement**

Particulars	Amount
Sales	15,000
Less: Variable Cost	7,500
Contribution	7,500
Less : Fixed cost	4,500
Profit	3,000

$$(a) \text{ P / V ratio} = \frac{\text{Contribution}}{\text{Sales}} \times 100 \text{ P / V ratio}$$

$$= \frac{7500}{15000} \times 100 = 50\%$$

$$(b) \text{ Break Even Sales} = \frac{\text{Fixed Expenses}}{\text{P/V ratio}}$$

$$\text{Break Even Sales} = \frac{4500}{50\%} = \text{Rs.}9,000$$

$$(c) \text{ Profit} = \text{Rs.}3,000$$

$$(d) \text{ Margin of safety} = \text{Sales} - \text{Break Even sales}$$

$$= 15,000 - 9,000 = \text{Rs.}6,000$$

$$(e) \text{ Sales to earn profit of Rs.}6,000$$

$$\text{Required sales} = \frac{\text{Fixed cost} + \text{Required Profit}}{\text{P/V ratio}}$$

$$= \frac{4,500 + 6,000}{50\%} = \text{Rs.}21,000.$$

### Illustration: 5

From the following information, calculate

- Break Even point
- No. of units that must be sold to earn profit of rs.60,000 per year
- No. of units that must be said to earn a net income of 10% on sales.

$$\text{Sales price} = \text{Rs.}20 \text{ per unit}$$

$$\text{Variable cost} = \text{Rs.}14 \text{ per unit}$$

$$\text{Fixed cost} = \text{Rs.}79,200$$

### Solution

$$\begin{aligned} \text{Contribution Per unit} &= \text{Sales Price per unit} - \text{Variable cost per unit} \\ &= 20 - 14 = 6 \end{aligned}$$

$$\text{P/V Ratio} = \frac{\text{Contribution}}{\text{Sales}} \times 100$$

$$= \frac{6}{20} \times 100 = 30$$

**NOTES**

$$(a) \text{ Break even point in units} = \frac{\text{Fixed Expense}}{\text{Contribution Per Unit}}$$

$$= \frac{79,200}{6} = 13,200 \text{ units}$$

$$\text{Break even point (in rupees)} = \frac{\text{Fixed Expense}}{\text{P/V Ratio}}$$

$$= \frac{79,200}{30\%} = \text{Rs.}264,000$$

**(b) No. of units is to be sold to make a profit of Rs.60,000 P.Y**

$$\text{Required sales} = \frac{\text{Fixed Expenses} + \text{required Profit}}{\text{P/V ratio}}$$

$$= \frac{79200 + 60,00}{30\%} = \text{Rs.}4,64,000$$

$$\text{Units} = \frac{4,64,000}{\text{Selling Price}}$$

$$= \frac{4,64,000}{20}$$

$$= 23,200 \text{ Units}$$

**(c) No. of units to be sold to make a net income of 10% on sales**

If 'x' is no. of units

$$20x = \text{Fixed cost} + \text{Variable cost} + \text{profit}$$

$$20x = 79,200 + 14x + 2x$$

$$20x - 16x = 79,200$$

$$X = \frac{79,200}{4} = 19,800 \text{ units}$$

**Proof :**

Sales = 19,800 x 20	=	396,000
Less : Variable cost (19,800 x 14)	=	277,200
Contribution	=	118,800

Less: Fixed cost = 79,200

Profit = 39,600

$$\text{Profit as a\% of sales} = \frac{39600}{39600} \times 100 = 10\%$$

## NOTES

### Illustration: 6

S.V.P. Ltd			T.R.R. Ltd	
Rs			Rs	
Sales		1,50,000		1,50,000
Less: variable cost	1,20,000		1,00,000	
Fixed cost	15,000		35,000	
		1,35,000		1,35,000
Budgeted net profit		15,000		15,000

Two businesses S.V.P Ltd and T.R.R. Ltd., sell the same type of product in the same type of market.

Their budget profit and loss accounts for the coming year are as follows:

You are required to:

- a) Calculate break – even point of each business
- b) Calculate the sales volume at which each business will earn Rs.5,000 Profit
- c) State which business is likely to earn greater profit in conditions of:
  - i. Heavy demand for the product
  - ii. Low demand for the product

Briefly give your reasons.

# NOTES

## Solution:

Particulars	SVP Ltd Rs	TRR Ltd Rs
Sales	1,50,000	1,50,000
Less: Variable Cost	1,20,000	1,00,000
contribution	30,000	50,000
Less: Fixed Cost	15,000	35,000
Profit.	15,000	15,000
<b>a) Calculation of Break even point</b>		
$P/V \text{ Ratio} = \frac{\text{Contribution}}{\text{Sales}} \times 100$	$\frac{30,000}{1,50,000} \times 100 = \text{Rs.}20\%$	$\frac{50,000}{1,50,000} \times 100 = \text{Rs.}33\frac{1}{3}\%$
$EVP = \frac{\text{Fixed Cost}}{P/V \text{ ratio}}$	$\frac{15,000}{20} \times 100 = \text{Rs.}75,000$	$\frac{35,000}{33\frac{1}{3}} \times 100 = \text{Rs.}1,05,000$
<b>b) Sales Required to earn profit of Rs.5,000</b>		
Required Sale = $\frac{\text{Required Profit} + \text{Fixed Cost}}{P/V \text{ Ratio}}$	$\frac{5,000 + 15,000}{20} \times 100 = \text{Rs.}1,00,000$	$\frac{5,000 + 35,000}{33\frac{1}{3}} \times 100 = \text{Rs.}1,20,000$

## Marginal cost and Contribution statement

C)

1. In conditions of heavy demand, a concern with higher P / V ratio can earn greater profits because of higher contribution. Thus, T.R.R. Ltd., is likely to earn greater Profit.
2. In conditions of low demand, a concern with lower Break even point is likely to earn more profits because it will start making points at lower level of sales. Therefore in case of low demand S.V.P. Ltd., will make profits when it sales reach Rs.75, 000, whereas T.R.R. Ltd., will start making profits only when its sales reach the level of Rs.1, 05,000.

## Illustration 7:

A factory's data are as follows:

Fixed expenses	Rs.4, 00,000
Variable cost per unit	Rs.20
Selling	Rs.30

Calculate the Break-even point.

Find out the New Break –even point if the selling price is reduced to Rs.15

## NOTES

### Solution

$$\text{B.E.P. (in unit)} = \frac{\text{Fixed expenses}}{\text{Contribution per unit}} = \frac{4,00,000}{20-10} = \frac{4,00,000}{10} = 40,000 \text{ units}$$

$$\text{New BEP} = \frac{4,00,000}{15-10} = \frac{4,00,000}{5} = 80,000 \text{ units}$$

### Illustration 8

Assuming that the cost structure and selling price remain the same in periods I and II, find out:-

1. Profit-Volume-Ratio
2. Fixed Cost and B.E.P
3. Profit when sales are Rs. 1, 00,000
4. Sales required earning a profit of Rs.20000
5. Margin of Safety for II period

### SOLUTION:.

Periods	Sales	Profit
I	1,20,000	9,000
II	1,40,000	13,000

$$\text{a) P/V Ratio} = \frac{\text{Change in Profit}}{\text{Change in Sales}} \times 100$$

$$= \frac{13,000-9,000}{1,40,000-1,20,000} \times 100$$

$$= \frac{4000}{20,000} \times 100 = 20\%$$

$$\text{b) B.E Sales} = \frac{\text{Fixed Cost}}{\text{P/V Ratio}}$$

Fixed cost is not given. Hence, it should be calculated first

**NOTES**

$$\text{Contribution} = \text{Sales} * \text{P/V Ratio} = \text{Rs. } 1,20,000 \times \frac{20}{100} = \text{Rs. } 24000$$

$$\text{Contribution} = \text{Rs. } 24000$$

$$(-) \text{ Fixed cost (Bal.Fig)} = \text{Rs. } 15000$$

$$\text{Profit} = \underline{\underline{\text{Rs. } 9000}}$$

$$\text{B.E. Sales} = \frac{\text{Rs. } 15000}{20} * 100 = \text{Rs. } 75000$$

c) Profit when sales are Rs. 1,00,000

$$\text{P/V Ratio} = \frac{\text{Contribution}}{\text{Sales}}$$

$$\text{Contribution} = \text{Sales} \times \text{P/V Ratio} = \text{Rs. } 1,00,000 \times \frac{20}{100} = \text{Rs. } 20000$$

$$\text{Contribution} = \text{Rs. } 20000$$

$$(-) \text{ Fixed cost (Bal.Fig)} = \text{Rs. } 15000$$

$$\text{Profit} = \underline{\underline{\text{Rs. } 5000}}$$

d) Sales required to earn a profit of Rs. 20000

$$= \frac{\text{Fixed expenses} + \text{Desired Profit}}{\text{P/V Ratio}}$$

$$= \frac{15000 + 20000}{20\%} = \frac{35000}{20} \times 100 = \text{Rs. } 175000$$

e) Margin of Safety for II period

$$= \frac{\text{Profit}}{\text{P/V Ratio}} = \frac{13000}{20} \times 100 = \text{Rs. } 65000$$

**Illustration 9**

Reliable Battery Co. furnishes you the following income information for the current year divided into two subparts:

**NOTES**

	First Half	Second Half
Sales	8,10,000	10,26,000
Profit Earned	21600	84800

From the above you are required to compute the following, assuming that the fixed cost remains the same in both the periods.

- P/v Ratio
- Fixed Cost
- The amount of profit or loss where sales are Rs.648000
- The amount of sales to earn a profit of Rs.108000

**Solution**

a)	P/v Ratio:	Sales	Profit
	Second Half	= Rs.10,26,000	Rs.64,800
	First Half	= 8,10,000	21,600
	Change in Sales & Profit	= <u>216000</u>	<u>43200</u>

$$P/V \text{ Ratio} = \frac{\text{Change in Profit}}{\text{Change in Sales}} \times 100 = \frac{43200}{216000} \times 100 = 20\%$$

**b) Fixed Cost:**

Contribution = Sales x P/V Ratio

$$= 810000 \times \frac{20}{100} = \text{Rs.}162000$$

Contribution = Fixed Cost + Profit

$$162000 = \text{Fixed Cost} + 21600$$

$$\therefore \text{Fixed Cost} = \text{Rs.}162000 - \text{Rs.}21600 = \text{Rs.}140400$$

**c) Calculation of Profit or Loss for sales of Rs.648000**

Contribution	= 20% of 648000	=	Rs. 129600
Less:- Fixed Cost		=	140400
Loss		=	<u>10800</u>

**NOTES**

d) Sales required to earn a profit of Rs.108000

$$= \frac{\text{Fixed expenses} + \text{Desired Profit}}{\text{P/V Ratio}}$$

$$= \frac{\text{Rs. 140400} + 10800}{20} \times 100 = \text{Rs. 1242000}$$

**Illustration 10:**

Margin of safety Rs.10,000 which represent 40% of sales. P/V Ratio 50%. Calculate.

(a) Sales      (b) Break even sales      (c) Fixed Cost      (d) Profit

**Solution :**

(a) Sales:

Margin of safety = 40% of sales

$$10000 = \frac{40}{100} \times \text{Sales}$$

$$\therefore \text{Sales} = 10000 \times \frac{100}{40} = \text{Rs. 25000}$$

(b) Break even sales:

Margin of safety = Actual sales – B.E Sales

Rs.10000 = Rs.25000 – B.E.S

$\therefore$  B.E.S = Rs.15000

(c) Fixed cost:

$$\text{BEP} = \frac{\text{Fixed cost}}{\text{P/v Ratio}}$$

$$\text{Rs. 15000} = \frac{\text{fixed cost}}{50\%}$$

$$\therefore \text{Fixed cost} = 15000 \times \frac{50}{100} = \text{Rs. 7500}$$

(d) Profit:

$$\text{P/v Ratio} = \frac{\text{Contribution}}{\text{Sales}}$$

$$\therefore \text{Contribution} = \text{Sales} \times \text{P/V Ratio}$$

$$= 25000 \times \frac{50}{100} = \text{Rs.}12500$$

$$\text{Contribution} = \text{Rs.}12500$$

$$(-) \text{Fixed cost} = \text{Rs.}7500$$

$$\text{Profit} = \underline{\underline{\text{Rs.}5000}}$$

**Illustration:11**

The P/V ratio of a firm dealing in Precision instruments is 50% and margin of safety is 40%.

You are required to work out break even point and net profit if the sales volume is Rs.50,00,000.If 25% of variable cost is labour cost, what will be the effect on BEP and Profit when labour efficiency decreases by 5%.

**Solution:**

(1) Calculation of Break Even Point

Margin of safety is 40% of sales

$$= 50,00,000 \times \frac{40}{100} = \text{Rs.}20,00,000$$

$$\begin{aligned} \text{Break Even sales} &= \text{sales} - \text{Margin of safety} \\ &= 50,00,000 - 20,00,000 \\ &= \mathbf{30,00,000} \end{aligned}$$

Calculation of Fixed cost.

$$\begin{aligned} \text{Break Even Sales} &= \frac{\text{Fixed Cost}}{\text{P / V Ratio}} \\ &= \text{Break Even Sales} \times \text{p/V Ratio} \\ &= 30,00,000 \times \frac{50}{100} = \mathbf{\text{Rs.}15,00,000} \end{aligned}$$

**NOTES**

(2) Calculation of Profit

$$\begin{aligned} \text{Contribution} &= \text{Sales} \times \text{P/V Ratio} \\ &= 50,00,000 \times \frac{50}{100} = \text{Rs.}25,00,000 \\ \text{Net Profit} &= \text{Contribution} - \text{Fixed cost} \\ &= 25,00,000 - 15,00,000 \\ &= \mathbf{\text{Rs.}10,00,000} \end{aligned}$$

(3) Effect of decrease in labour Efficiency by 5%

$$\begin{aligned} \text{Variable Cost} &= \text{Sales} - \text{Contribution} \\ &= 50,00,000 - 25,00,000 \\ &= \mathbf{\text{Rs.}25,00,000} \end{aligned}$$

$$\begin{aligned} \text{Labour Cost} &= 25,00,000 \times \frac{25}{100} \\ &= \mathbf{\text{Rs.}6,25,000} \end{aligned}$$

New labour cost when labour efficiency decrease by 5%

$$\begin{aligned} &= 6,25,000 \times \frac{100}{95} \\ &= \mathbf{\text{Rs.}6,57,895} \end{aligned}$$

$$\begin{aligned} \text{Increase in labour cost} &= 6,57,895 - 6,25,000 \\ &= \mathbf{\text{Rs.}32,895} \end{aligned}$$

$$\begin{aligned} \text{New variable cost} &= 25,00,000 + 32,895 \\ &= \mathbf{\text{Rs.}25,32,895} \end{aligned}$$

$$\begin{aligned} \text{Contribution} &= 50,00,000 - 25,32,895 \\ &= \mathbf{\text{Rs.}24,67,105} \end{aligned}$$

$$\begin{aligned} \text{Profit} &= \text{Contribution} - \text{Fixed cost} \\ &= 24,67,105 - 15,00,000 \\ &= \mathbf{\text{Rs.}9,67,105.} \end{aligned}$$

**NOTES**

$$\begin{aligned} \text{New P / V} &= \frac{24,67,105}{50,00,000} \times 100 \\ &= \mathbf{49.3421\%} \\ \text{New BEP} &= \frac{\text{Fixed cost}}{\text{P / V}} \\ &= \mathbf{Rs.30,40,000} \end{aligned}$$

**Note:**

If for 100 units labour cost is Rs.100, 5% decrease in efficiency makes the labour to produce only 95 units in the same time.

$$\text{Cost of 95 units} = \text{Rs.100}$$

$$\begin{aligned} \text{Cost of 100 units} &= \frac{100}{95} \times 100 \\ &= 105.2635 \end{aligned}$$

Original labour cost has to be multiplied with 10 To get new labours cost.95

**Illustration 12**

The following information in respect of product A and product B of a firm is given:

Variable Overhead-100% of direct wages

	<b>Product A</b>	<b>Product B</b>
Selling Price	Rs.75	Rs.48
Direct Material	Rs.30	Rs.30
Direct Labour hours (Re.0.50 per hour)	15 hours	2 hours

Fixed Overhead Rs.3000

Show the Profitability of Products during labour shortage.

**Solution:-****CONTRIBUTION STATEMENT**

		<b>A</b>		<b>B</b>
		<b>Rs.</b>		<b>Rs.</b>
Sales		75		48
<b>Less: Marginal Cost :-</b>				
Direct Materials	30.00		30.00	
Direct Wages	7.50		1.00	
Variable Overhead	7.50	45	1.00	32
Contribution		30		16

**NOTES**

$$\text{Profitability} = \frac{\text{Contribution}}{\text{Key Factor}} = \frac{\text{Contribution}}{\text{Labour Hours}}$$

$$\text{Product A} = \frac{\text{Rs.30}}{15 \text{ Hours}} = \text{Rs.2 Per Hour}$$

$$\text{B} = \frac{\text{Rs.16}}{2 \text{ Hours}} = \text{Rs.8 Per Hour}$$

∴ Product B is preference during labour shortage.

**Illustration 13 :-**

	<b>Product A (per unit)</b>	<b>Product B (per unit)</b>
Selling Price	Rs.200	Rs.500
Material (Rs.20 per litre)	40	160
Labour (Rs.10 per hour)	50	100
Variable Overhead	20	40

The following particulars are obtained from costing records of a factory

Total fixed overheads – Rs.15000

Comment on the profitability of each product when:

- Raw materials is in short supply
- Production capacity is limited
- Sales quantity is limited.
- Sales value is limited
- Only 1000 litres of raw material is available for both the products in total and maximum sales quantity of each product is 300 units.

**Solution:**

<b>i) Contribution statement</b>	<b>Product A (Per unit)</b>		<b>Product B (per unit)</b>	
Selling price:		Rs.200		Rs.500
Less: Variable cost : materials	40		160	
Labour	50		100	
Variable overhead	20	110	40	300
Contribution per unit		90		200
<b>ii) P/V Ratio = <math>\frac{\text{Contribution}}{\text{Sales}} \times 100</math></b>		$\frac{90}{200} \times 100 = 45\%$		$\frac{200}{500} \times 100 = 40\%$
<b>iii) Contribution per litre</b>				
A = $\text{Rs.} \frac{40}{20} = 2 \text{ litres}$		$\frac{\text{Rs.}90}{2 \text{ litres}} = \text{Rs.}45$		$\frac{\text{Rs.}200}{8 \text{ litres}} = \text{Rs.}25$
B = $\frac{\text{Rs.}160}{\text{Rs.}20} = 8 \text{ litres}$				
<b>iv) Contribution per hour</b>				
A = $\frac{\text{Rs.}50}{\text{Rs.}10} = 5 \text{ hrs}$		$\frac{\text{Rs.}90}{5 \text{ hrs}} = \text{Rs.}18$		$\frac{\text{Rs.}200}{10 \text{ hrs}} = \text{Rs.}20$
B = $\frac{\text{Rs.}100}{\text{Rs.}10} = 10 \text{ hrs}$				

**Comment:****a) Raw material is in short supply:**

Product "A" is profitable. Hence it gives more contribution per litre.

**b) Production capacity (hours) is limited:**

Product "B" is profitable. Hence it gives more contribution per hour.

**c) Sales quantity is limited:**

Product "B" is profitable. Hence it gives a more contribution of Rs.200 per unit.

**d) Sales value is limited:**

Product "A" is profitable. Hence it gives higher P/V Ratio i.e. high profit on sales volume.

**e) Raw material and sales quantity is limited:**

Total litres available = 1000

Maximum sales quantity = 300 units

**NOTES**

## NOTES

One unit of product "A" requires = 2 litres

One unit of product "B" requires = 8 litres

∴ Maximum raw materials (litres) should be issued to product "A", because it consumes less quantity of 2 litre per product.  $300 \text{ units} \times 2 \text{ litre} = 600 \text{ litres}$

The remaining ( $1000 \text{ litres} - 600 \text{ litres} = 400 \text{ litres}$ ) can be issued to product "B".  
 $50 \text{ units} \times 8 \text{ litres} = 400 \text{ litres}$

### PROFIT STATEMENT

Contribution for:	
Product A : 300 units * Rs.90	27000
Product B : 50 units * Rs.200	10000
Total Contribution	37000
Less: Fixed expenses	15000
<b>Profit</b>	<b>22000</b>

### STANDARD COSTING

#### 2.1.26 Meaning of Standard, Standard Cost, Standard Costing

**Standard:** It is a 'Norm' or 'Yardstick' against which comparison can be made.

**Standard cost:** It is a pre-determined cost. It is calculated well in advance before the manufacturing activity starts. It is used as a guide for decision making.

**Standard costing:** As per CIMA, London, "standard costing is the preparation and use of standard costs, their comparison with actual costs and the analysis of variances to their causes and points of incidence"

#### 2.1.27 Steps Involved in Standard Costing

Standard costing is a powerful system used for controlling cost. The following are the steps involved in standard costing:

- i. Establishment of standard costs.
- ii. Measuring up the actual costs.
- iii. Comparison of actual costs against standard costs.
- iv. Ascertaining the deviation of actual costs from standard costs.
- v. Analysing the causes for the deviation and taking appropriate corrective actions.

#### 2.1.28 Advantages of Standard Costing

- i. It is a powerful tool used for cost control.
- ii. Helps in elimination of wastages and inefficiency in the production process.

- iii. Compares actual costs with standard costs to ascertain the efficiency or otherwise of the business.
- iv. Creates cost consciousness by fixing responsibility among the employees for the performance.
- v. Facilitates implementation of 'Management by exception' principle, wherein the management can concentrate on deviations only.
- vi. Helps in locating inefficiencies and ensure effective utilization of men, material and machine for increasing productivity.
- vii. Since standard are set after a careful evaluation of methods and operation, cost reduction is made possible through improved methods and operations.
- viii. It is useful in planning and budgeting.
- ix. It guides management in formulating price and production policy.
- x. Ensures easy and effective supervision as 'remote control' becomes possible through standards.

#### 2.1.29 Limitations of Standard Costing

- i. The system is quite costly and cannot be afforded by small firms.
- ii. It is difficult to fix standard.
- iii. Standards should be frequently revised which may be cumbersome.
- iv. Practically, it is very difficult to fix responsibility on a person when the production process is influenced by controllable and uncontrollable variances.
- v. It is not suitable for non-repetitive jobs or products
- vi. Incorrect standards may lead to resistance and other problems among employees.

#### 2.1.30 Meaning of Variance and Variance Analysis

**Variance:** It refers to the difference between standard costs and actual cost. According to CIMA, "Variance is the difference between the standard cost and the comparable actual cost incurred a period"

A variance may be favorable or adverse.

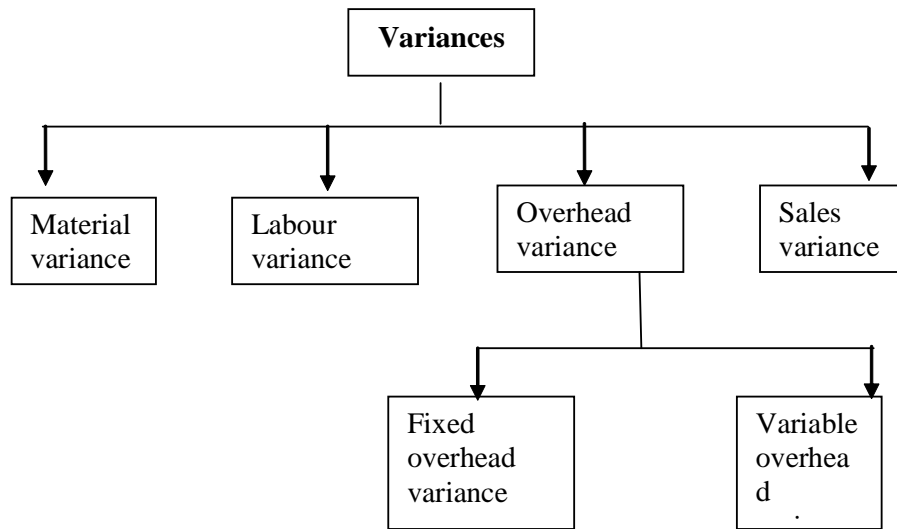
In case of cost variances, if the actual cost is less than the standard cost, and in case of sales variances, if the actual sales is more than the standard, the variances are said to be favorable. In case of unfavorable variances, the situation will be of the reverse order.

**Variance analysis:** It is the process of analyzing variances by sub-dividing the total variance in such a way that the causes for the deviations are identified and the reasonability for sub-standard performance can be fixed.

# NOTES

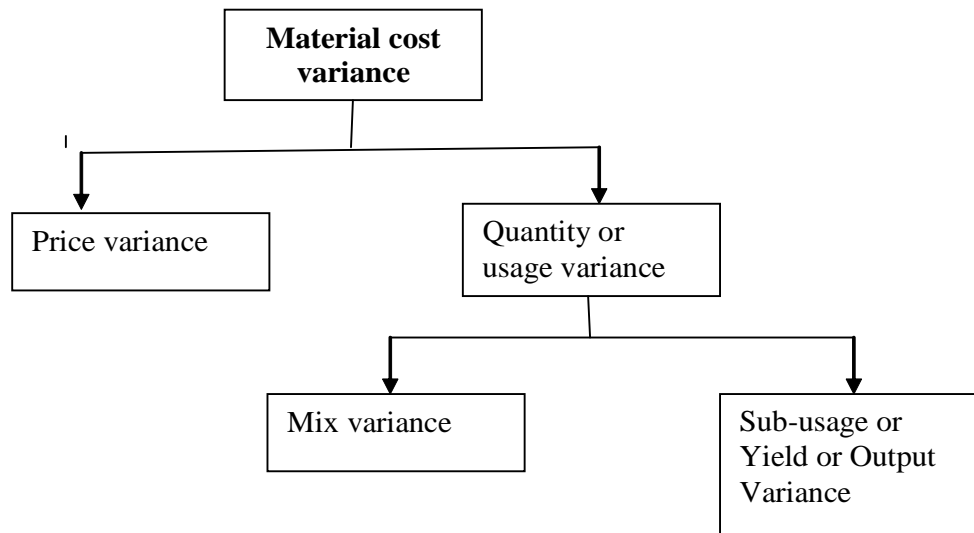
## 2.1.31 Classification of Variances

Variances can be broadly classified as follows:



## 2.1.32 Material Variance

Variances relating to material cost can be analysed as follows:



The table given below **explains** the meaning, modus operandi for calculating and interpreting the above material variances. The following abbreviations are used in the formulae:

Standard	Actual
SQ= Standard Quantity	AR= Actual Quantity
SP= Standard Price	AP= Actual Price
SY= Standard Yield	AY= Actual Yield
SL= Standard Loss	AL= Actual Loss
RSQ= Revised standard Quantity	

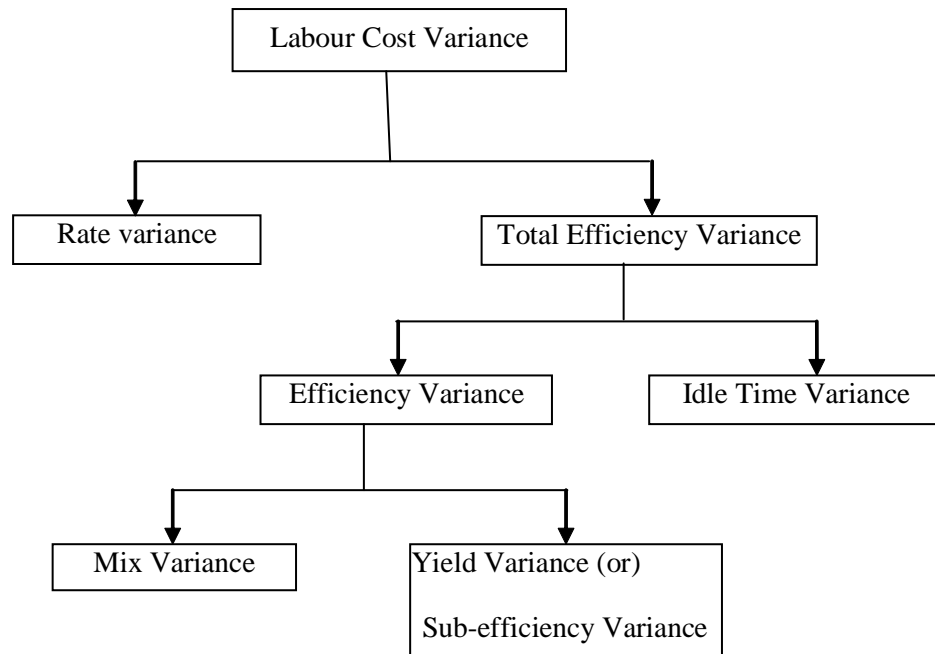
**NOTES**

Variance	Meaning	Formulae	Interpretation
Material cost variance	It is the difference standard cost and the actual cost incurred.	Standard cost- Actual cost (or) [SQ*SP]- [AQ*AP]	Favorable: Actual cost less than standard cost. Adverse: Actual cost more than standard cost.
Price Variance	It is that part of cost variance which shows the difference between the standard price and the actual price of the materials used.	[SP-AP]AQ	Favorable: Actual price less than standard. Adverse: Actual price more than standard.
Quantity (or) Usage Variance	It is that part of material cost variance which shows the difference between the standard quantity required for actual output and the actual quantity of materials used.	[SQ-AQ]SP	Favorable: Actual quantity less than standard. Adverse: Actual quantity more than standard.
Mix variance	It arises only when there is a difference between total weight of standard mix and actual weight of actual mix. Mix variance is that part of usage variance which shows the difference between revised standard quantity and actual quantity valued at standard price	[RSP-AQ]SP  RSP= Total AQ/Total SQ*SQ of each material	Favorable: Actual quantity less than revised standard quantity. Averse: Actual quantity more than revised standard quantity.
Sub-usage variance (or) Yield or output variance	It is calculated when production loss is given. Yield variance is that portion of usage variance which is due to the difference between the standard yield and actual yield.	[SY-AY]SP per unit (or) [SL-AL]SP per unit SY: refers to standard yield on total actual input. SL: refers to standard loss on total actual input.	Favorable: Actual output more than standard output. Actual loss less than standard loss. Adverse: Actual output less than standard output. Actual loss more than standard loss.

# NOTES

## 2.1.33 Labour Variance

Variance Variances relating to labour cost can be analysed as follows:



Abbreviations used in computing the above variances are given below:

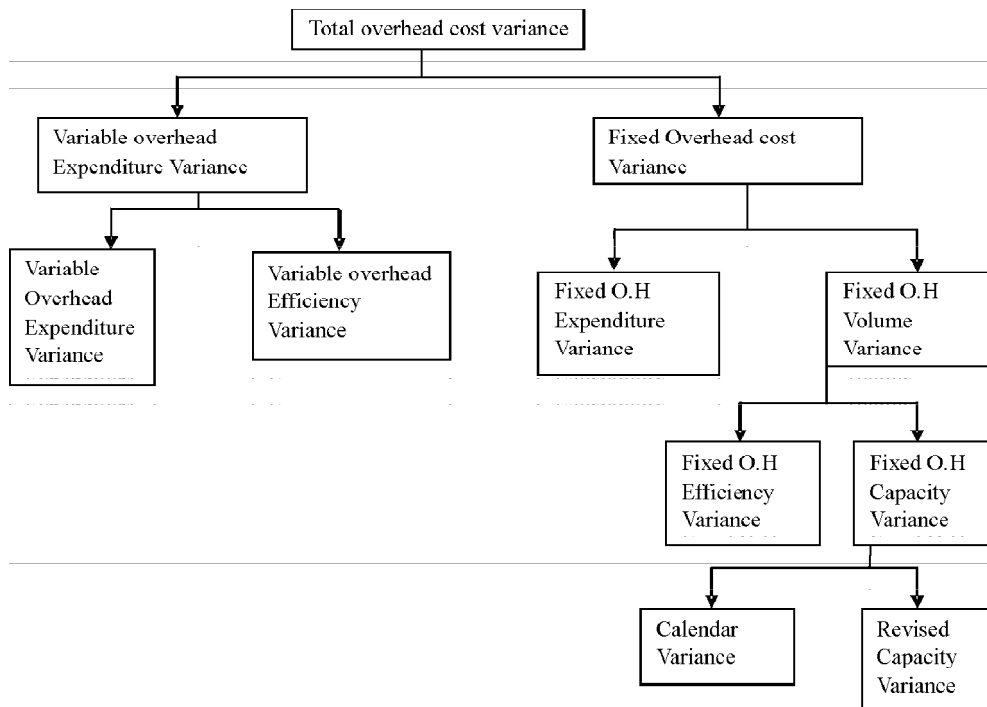
SH	=	Standard Hours
SR	=	Standard Rate
AH	=	Actual Hours
AR	=	Actual Rate
EH	=	Effective Hours = Hours worked - Idle Hours
RSM	=	Revised Standard Hour

Variance	Meaning	Formulae	Interpretation
Labour cost variance	It is the difference between the standard and actual cost.	$[SH * AR] - [AR * AH]$	Favorable: If Actual are less than standard. Adverse: If Actual are more than standard.
Labour Rate Variance	It is the difference between standard and actual rate for Actual hour.	$[SR - AR] * AH$	Favorable: If actual is greater than standard. Adverse: If actual is less than standard.
Total Efficiency Variance	It is the difference between standard and actual hours at standard rate.	$[SH - AH] * SR$	Favorable: If AH is lesser than SH. Adverse: If AH is greater than SH.

# NOTES

Efficiency Variance	It is the difference between standard and effective hours [i.e. Hours worked less Idle Hours] at standard rate.	$[SH - EH]SR$	Favorable: If effective hours are less than standard hours. Adverse: If effective hours are more than standard hours.
Idle Time Variance	It is the idle hours paid at standard rate.	Idle hours*SR	Always Adverse.
Mix Variance or Gang composition variance	It is the difference between Revised Standard Hours [RSH] and Actual hours at standard rate.	$[RSH - AH]SR$	Favorable: If AH is less than RSH. Adverse: If AH is more than RSH.
Yield or Sub-Efficiency Variance	It is the difference between standard hours and revised standard hour at Standard rate.	$[SH - RSH]SR$	Favorable: If RSH is less than SH. Adverse: If RSH is more than SH

## 2.1.34 Overhead Costing



The following abbreviations are used in the formulae for computing overhead variances:

**NOTES****Variable Overhead Cost Variance**

TSCAO	=	Total standard cost for actual output.
TAC	=	Total actual cost.
SVCAO	=	Standard variable cost for actual output.
AVC	=	Actual variable cost.
SRPH	=	Standard rate per hour.
ARPH	=	Actual rate per hour.
AH	=	Actual hours.
SHAO	=	Standard hours for actual output.

**Fixed Overhead Cost Variance:**

SFCAO	=	Standard fixed cost for actual output.
AFC	=	Actual fixed cost.
BFC	=	Budgeted fixed cost.
AFC	=	Actual fixed cost.
BO	=	Budgeted output.
AO	=	Actual output.
SRPU	=	Standard rate per unit.
SHAO	=	Standard hour for actual output.
AH	=	Actual hours.
SRPM	=	Standard rate per unit.
BH	=	Budgeted hours.
AH	=	Actual hours.
BHBD	=	Budgeted hours for budgeted days.
SHAD	=	Standard hours for actual days.

Variance	Meaning	Formulae	Interpretation
Total overhead cost variance	It is the difference between standard overhead cost for actual output [i.e. Recovered Overheads] and actual output	TSCAO- TAC	Favorable: Actual cost less than standard cost. Adverse: Actual cost more than standard cost.
Variable O.H cost Variance	It is the difference between standard variable overhead cost for actual output and actual variable overhead cost.	SVCAO- AVC	Favorable: Actual cost less than standard cost. Adverse: Actual cost more than standard cost

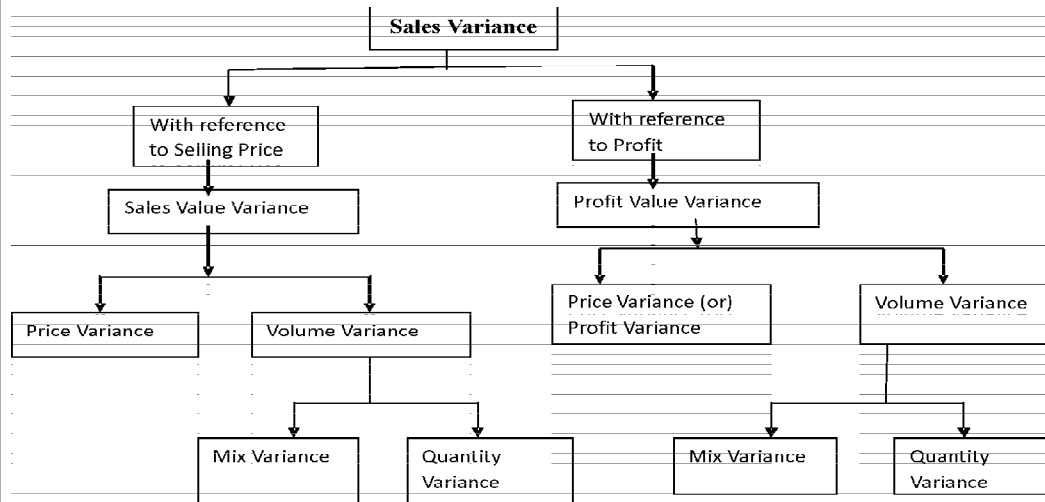
**NOTES**

Fixed overhead cost variance	It is the difference between standard fixed overhead cost for actual output and actual fixed overhead cost.	SFCAO-AFC	Favorable: Actual cost less than standard cost. Adverse: Actual cost more than standard cost.
Variable O.H Expenditure variance	It is the difference between standard variable overhead rate and actual variable overhead rate for the actual hours.	[SRPH-ARPH] AH	Favorable: Actual rate less than standard rate. Adverse: Actual rate more than standard rate.
Variable O.H Efficiency variance	It is the difference between standard hours for actual output and actual hours at standard rate per hour.	[SHAO-AH]SRP H	Favorable: Actual hours less than standard hours. Adverse: Actual hours more than standard hours.
Fixed O.H Expenditure variance	It is the difference between budgeted fixed cost and actual fixed cost.	BFC-AFC	Favorable: Actual hours less than standard hours. Adverse: Actual hours less than standard hours.
Fixed O.H volume variance	It is the difference between budgeted output and actual output at standard rate per unit.	[BO-AO]SRP U	Favorable: Actual output more than budgeted output. Adverse: Actual output less than budgeted output.
Fixed O.H Efficiency variance	It is the difference between standard hours for actual output and actual hours at standard rate per hour.	[SHAO-AH]SRP H	Favorable: Actual hours less than standard hours. Adverse: Actual hours more than standard hours.
Fixed O.H capacity variance	It is the difference between budgeted hours for budgeted days and standard hours for actual days at standard rate per hour.	[BH-AH]SRP H	Favorable: Actual hours utilized more than budgeted hours. Adverse: Actual hours less than budgeted hours.
Calendar variance	It is the difference between budgeted hours for budgeted days and standard hours for actual days at standard rate per hour.	[BHBD-SHAD]SRPH	Favorable: If standard hours are more than budgeted hours. Adverse: If standard hours are less than budgeted hours.
Revised capacity variance	It is the difference between standard hours for actual days and actual hours.	[SHAD-AH]SRP H	Favorable: If actual hours are more than standard hours. Adverse: If actual hours are more than standard hours.

# NOTES

## 2.1.35 Sales Variances

Sales variances can be calculated with reference to i) Selling price, ii) Profit as shown below:



For calculating the above variances, the following abbreviations are used:

### With reference to selling price:

- SQ = Standard Quantity.
- SP = Standard Selling Price.
- AQ = Actual Quantity.
- AP = Actual Price.
- RSQ = Revised Standard Quantity.

### With reference to Profit:

- SQ = Standard Quantity.
- SP = Standard Price.
- AQ = Actual Quantity.
- AP = Actual Price.
- RSQ = Revised Standard Quantity.

## NOTES

Variance	Meaning	Formulae	Interpretation
<b><u>With reference to selling price:</u></b> Sales Value Variance	It refers to the difference between standard sales and actual sales.	$[SQ*SP]-[AQ*AP]$	Favorable: If actual is more than standard. Adverse: If actual is less than standard.
Price Variance	It refers to the difference between actual selling price and standard selling price for actual quantity sold.	$[SP-AP]AQ$	Favorable: If actual price is more than standard. Adverse: If actual price is less than standard.
Volume Variance	It is the difference between standard and actual sales quantity at standard rate.	$[SQ-AQ]SP$	Favorable: If actual quantity exceeds standard. Adverse: If actual quantity is less than standard.
Mix Variance	It is the difference between revised standard quantity and actual quantity at standard hours.	$[RSQ-AQ]SP$	Favorable: If AQ exceeds RSQ. Adverse: If AQ is less than RSQ.
Quantity Variance	It is the difference between standard quantity and revised standard quantity at standard price.	$[SQ-RSQ]SP$	Favorable: If RSQ exceeds SQ Adverse: If RSQ is less than SQ.
<b><u>With reference to profit:</u></b>	It refers to the difference between standard profit and actual profit.	$[SQ*SP]-[AQ*AP]$	Favorable: If actuals exceed standard.

**NOTES**

Particulars	Standard			Actual		
	Qty[kilo]	Rate	Amt Rs.	Qty[kilo]	Rate	Amt Rs.
Material A	10	2	20	5	3	15
Material B	20	3	60	10	6	60
Material C	20	6	120	15	5	75
Total	50		200	30		150

**Illustration 14:****From the following information calculate material variance****Solution:****Material cost variance:**  $SQ \times SP - [AQ \times AP]$ 

$$: [10 \times 2] - [5 \times 3] = \text{Rs.} 5 \text{ [F]}$$

$$: [20 \times 3] - [10 \times 6] = 0$$

$$: [20 \times 6] - [15 \times 5] = \text{Rs.} 45 \text{ [F]}$$

$$\text{Total} = 50 \text{ [F]}$$

**Material Price Variance:**  $[SP - AP] AQ$ 

$$\text{A: } [2 - 3] 5 = 5 \text{ [A]}$$

$$\text{B: } [3 - 6] 10 = 30 \text{ [A]}$$

$$\text{C: } [6 - 5] 15 = 15 \text{ [F]}$$

$$\text{Total} = 20 \text{ [A]}$$

**Material Quantity variance:**  $[SQ - AQ] SP$ 

$$\text{A: } [10 - 5] 2 = 10 \text{ [F]}$$

$$\text{B: } [20 - 10] 3 = 30 \text{ [F]}$$

$$\text{C: } [20 - 15] 6 = 30 \text{ [F]}$$

$$\text{Total} = 70 \text{ [F]}$$

**Material mix variance:**  $RSQ - AQ] SP$

$$RSQ = SQ \text{ of material} / \text{total SQ} \times SP$$

$$A: 10/50 \times 30 = 6$$

$$B: 20/50 \times 30 = 12$$

$$C: 20/50 \times 30 = 12$$

$$A: (6-5)2 = \text{Rs.}2 \text{ [F]}$$

$$B: (12-10)3 = \text{Rs.}6 \text{ [F]}$$

$$C: (12-15)6 = \text{Rs.}18 \text{ [A]}$$

$$\text{Total} = 10 \text{ [A]}$$

**Material sub-usage variance:**  $[SQ - RSQ] SP$

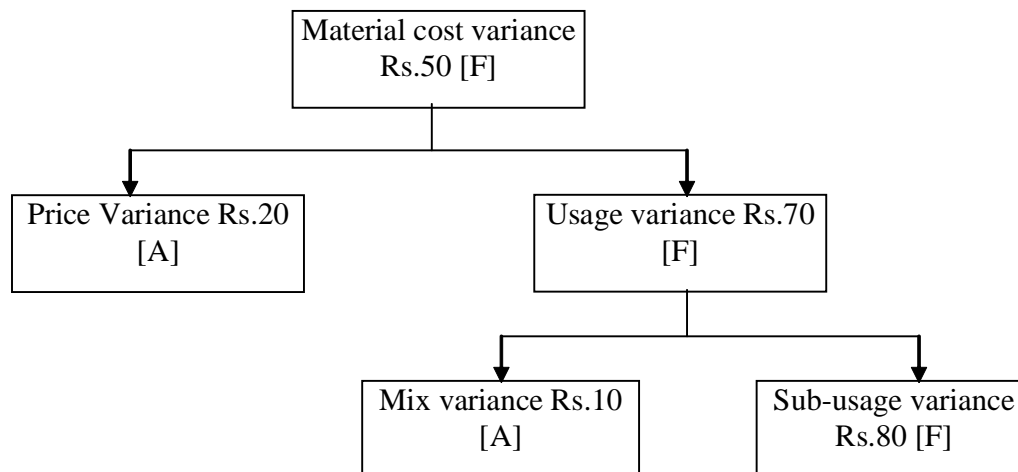
$$A: [10-6]2 = \text{Rs.}8 \text{ [F]}$$

$$B: [20-12]3 = \text{Rs.}24 \text{ [F]}$$

$$C: [20-12]6 = \text{Rs.}48 \text{ [F]}$$

$$\text{Total} = 80 \text{ [F]}$$

**Check:**



**NOTES****Illustration: 15**

Calculate Material Variance from the following:

Particulars	Standard			Actual		
	Qty[unit]	Rate	Amt Rs.	Qty[unit]	Rate	Amt Rs.
Material A	70	10	700	400	11	4400
Material B	30	5	150	200	6	1200
Total	100		850	600		5600
Loss 15%	15		-	60 (10%)	-	
Total	85		850	540		5600

**Solution:**

First, calculate standard quantity for actual production [Refer working note]

Particulars	Standard			Actual		
	Qty[unit]	Rate	Amt Rs.	Qty[unit]	Rate	Amt Rs.
Material A	444.71	10	4447	400	11	4400
Material B	190.59	5	953	200	6	1200
Total	635.30		5400	600		5600
Loss 15%	95.30		-	60 (10%)		-
Total	540		5400	540		5600

**Material cost variance:**  $[SQ \times SP] - [AQ \times AP]$

Material A:  $[444.71 \times 10] - [400 \times 11] = \text{Rs.}47 \text{ [F]}$

Material B:  $[190.59 \times 5] - [200 \times 6] = \text{Rs.}247 \text{ [A]}$

Total = Rs.200 [A]

**Material price variance:**  $[SQ - AQ] \times SP$

Material A:  $[10 - 11] \times 400 = \text{Rs.}400 \text{ [A]}$

Material B:  $[5 - 6] \times 200 = \text{Rs.}200 \text{ [A]}$

Total = Rs.600 [A]

**NOTES****Material usage variance:** [SQ-AQ] SP

$$\text{Material A: } [444.71-400]10 = \text{Rs.}447 \text{ [F]}$$

$$\text{Material B: } [190.59-200]5 = \text{Rs.} 47 \text{ [A]}$$

$$\text{Total} = \text{Rs.}400 \text{ [F]}$$

**Material mix variance:** [RSQ-AQ] SP

$$\text{RSQ} = \text{SQ of material/Total SQ} \times \text{Total AQ}$$

$$\text{Material A} = 444.71/635.30 \times 600 = 420 \text{ units}$$

$$\text{Material B} = 190.59/635.30 \times 600 = 180 \text{ units}$$

**Material mix variance:**

$$\text{A: } [420-400]10 = 200 \text{ [F]}$$

$$\text{B: } [180-200]5 = 100 \text{ [A]}$$

$$\text{Total} = 100 \text{ [F]}$$

**Material Yield Variance:** [SQ-RSQ] SP

$$\text{A: } [444.71-420]10 = 247 \text{ [F]}$$

$$\text{B: } [190.59-180]5 = 53 \text{ [F]}$$

$$\text{Total} = 300 \text{ [F]}$$

**Working notes:****Calculation of standard quantity for actual production**

Actual production = 540 units

**Material A:**

To produce 85 units, 70 units are required.

To produce 540 units,  $540/85 \times 70 = 444.71$  units.

**Material B:**

To produce 85 units, 30 units are required.

To produce 540 units,  $540/85 \times 30 = 190.59$  units.

**NOTES**

Standard			Actual		
Hour	Rate Rs.	Amt Rs.	Hours	Rate Rs.	Amt Rs.
5000	4	20000	6000	3.50	21000

**Illustration: 16**

Compute Labour variance from the following:

Idle time was 300 hours.

**Solution:**

**Labour cost variance:**  $[SH \times SR] - [AH \times AR]$   
 $= [5000 \times 4] - [6000 \times 3.50] = \text{Rs. } 1000[\text{A}]$

**Labour rate variance:**  $[SR - AR] AH$   
 $= [4 - 3.50] 6000 = \text{Rs. } 3000[\text{F}]$

**Total labour efficiency variance:**  $[SH - AH] SR$   
 $= [5000 - 6000] 4 = 4000[\text{A}]$

**Labour efficiency variance:**  $[SH - EH] SR$   
 $= [5000 - 5700] 4 = 2800[\text{A}]$

**Idle time variance:** Idle hours  $\times$  SR  
 $= 300 \times 4 = 1200[\text{A}]$

**ILLUSTRATION 17**

From the following data, calculate labour variances:

Budgeted labour for completing a job:

8 skilled workers at Rs.10 per hour for 20 hours

12 unskilled workers at Rs. 8 per hour for 20 hours

Actual **labour** for completing the job:

12 skilled workers at Rs.11 per hour for 20 hours.

13 unskilled workers at Rs.7 per hour for 20 hours.

**SOLUTION****NOTES**

Particulars	Standard			Actual		
	Hours	Rate Rs.	Amount Rs.	Hours	Rate Rs.	Amount RS.
Skilled	160	10	1600	240	11	2640
Unskilled	240	8	1920	260	7	1820
<b>Total</b>	<b>400</b>		<b>3520</b>	<b>500</b>		<b>4460</b>

**Labour cost variance:**  $[SH \times SR] - [AH \times AR]$  Rs.

Skilled:  $[160 \times 10] - [240 \times 11] = 1040 (A)$

Unskilled:  $[240 \times 8] - [260 \times 7] = 100 (F)$

Total = 940 (A)

**Labour rate variance:**  $[SR - AR] AH$  Rs.

Skilled:  $[10 - 11] 240 = 240 (A)$

Unskilled  $[8 - 7] 260 = 260 (F)$

Total 20 (F)

**Total efficiency variance :**  $[SH - AH] SR$  Rs.

Skilled:  $[160 - 240] 10 = 800 (A)$

Unskilled  $[240 - 260] 8 = 160 (F)$

Total 960 (F)

**Efficiency variance:**  $[SH - EH] SR$  Rs.

Skilled:  $[160 - 240] 10 = 800 (A)$

Unskilled  $[240 - 260] 8 = 160 (F)$

Total 960 (F)

**Idle time variance :** Idle hours x SR Rs.

0 X 10 = 0

0 X 8 = 0

Total 0

Mix variance  $[RSH - AH] SR$

**NOTES**

$$\text{RSH} = \frac{\text{Standard hours}}{\text{Total standard hours}} \times \text{Total actual hours}$$

$$\text{Skilled} = \frac{160}{400} \times 500 = 200 \text{ hours}$$

$$\text{Unskilled} = \frac{240}{400} \times 500 = 300 \text{ hours}$$

**Mix variance:**

	Rs.
Skilled = [ 200 – 240 ] 10	= 400 (A)
Unskilled = [ 300 – 260 ] 8	= 320 (F)
Total	= <u>80 (A)</u>

**Sub-efficiency variance :** [SH –RSH] SR      Rs.

Skilled: [ 160 – 200 ] 10      400 (A)

Unskilled [ 240 – 300 ] 8      480 (F)

Total      880 (F)

**ILLUSTRATION 18**

X Ltd has furnished you the following data for a particular month:

Particulars	Budget	Actual
<b>Output [ units ]</b>	30,000	32,500
<b>Hours</b>	30,000	33,000
<b>Fixed overhead</b>	Rs. 45,000	Rs.50,000
<b>Variable overhead</b>	Rs. 60,000	Rs. 68,000
<b>Working days</b>	25	26



**NOTES****Fixed O.H. variances**

(i) Fixed O.H. cost variance : [ SFCAO – AFC ]	Rs.
= [ 48,750 – 50,000 ]	= 1,250 (A)
(ii) Fixed O.H. expenditure variance : [ BFC – AFC ]	Rs.
= [ 45,000 – 50,000 ]	= 5,000 (A)
(iii) Fixed O.H. volume variance : [ BO – AO ] SRPU	Rs.
= [ 30,000 – 32,500 ] 1.50	= 3,750 (A)
(iv) Fixed O.H. efficiency variance : [ SHAO – AH ] SRPH	Rs.
= [ 32,500 – 33,000 ] 1.50	= 750 (A)
(v) Fixed O.H. capacity variance : [ BH – AH ] SRPH	Rs.
= [ 30,000 – 33,000 ] 1.50	= 4,500 (A)
(vi) Calendar variance : [ BHBD – SHAD ] SRPH	Rs.
= [ 30,000 – 31,200 ] 1.50	= 1,800 (A)
(vii) Revised capacity variance : [ SHAD – AH ] SRPH	Rs.
= [ 31,200 – 33,000 ] 1.50	= 2,700 (A)

**Working note: Standard for actual output**

1) 30,000 units require 30,000 hours

$$32,500 \text{ units will require: } \frac{32,500}{30,000} \times 30,000 = 32,500 \text{ hours}$$

2) 30,000 units require variable O.H. of Rs. 60,000

$$32,500 \text{ units will require: } \frac{32,500}{30,000} \times 60,000 = \text{Rs. } 65,000$$

**NOTES**

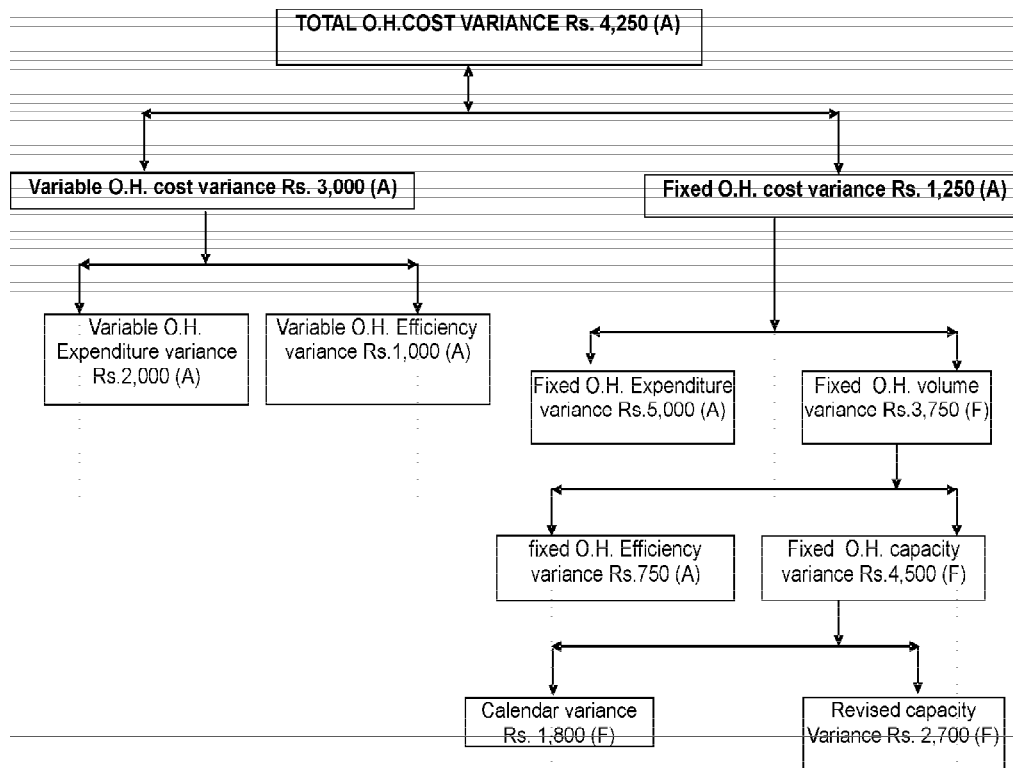
3) 30,000 units require fixed O.H. of Rs.45,000

$$32,500 \text{ units will require: } \frac{32,500}{30,000} \times 45,000 = \text{Rs. } 48,750$$

4) For 25 days, budgeted hour are 30,000

$$\text{For 26 days, standard hours are : } \frac{26}{25} \times 30,000 = 31,200 \text{ hours}$$

**CHECK:**



**ILLUSTRATION 19**

Compute sales variances with reference to selling price from the following:

Product	Standard			Actual		
	Qty	Price Rs.	Amount Rs.	Qty	Price Rs.	Amount Rs.
A	8,000	12	96,000	9,000	11	99,000
B	12,000	9	1,08,000	6,000	10	60,000
<b>Total</b>	<b>20,000</b>		<b>2,04,000</b>	<b>15,000</b>		<b>1,59,000</b>

**NOTES****SOLUTION:**

<b>Sales value variance :</b>	$[SQ \times SP] - [AQ \times AP]$	Rs.
A =	$[8,000 \times 12] - [9,000 \times 11]$	= 3,000 (F)
B =	$[12,000 \times 9] - [6,000 \times 10]$	= 48,000 (A)
	Total	<u>45,000 (A)</u>

<b>Sales price variance :</b>	$[SP - AP] AQ$	Rs.
A =	$[12 - 11] 9,000$	= 9,000 (A)
B =	$[9 - 10] 6,000$	= 6,000 (F)
	Total	<u>3,000 (A)</u>

<b>Sales volume variance :</b>	$[SQ - AQ] SP$	Rs.
A =	$[8,000 - 9,000] 12$	= 12,000 (F)
B =	$[12,000 - 6,000] 9$	= 54,000 (A)
	Total	<u>42,000 (A)</u>

**Sales mix variance :**  $[RSQ - AQ] SP$

$$RSQ = \frac{SQ}{\text{Total SQ}} \times \text{Total AQ}$$

$$A = \frac{8,000}{20,000} \times 15,000 = 6,000 \text{ units}$$

$$B = \frac{12,000}{20,000} \times 15,000 = 9,000 \text{ units}$$

<b>Mix variance:</b>		Rs.
A =	$[6,000 - 9,000] 12$	= 36,000 (F)
B =	$[9,000 - 6,000] 9$	= 27,000 (A)
	Total	<u>9,000 (F)</u>

<b>Sales quantity variance :</b>	$[SQ - RSQ] SP$	Rs.
A =	$[8,000 - 6,000] 12$	= 24,000 (A)
B =	$[12,000 - 9,000] 9$	= 27,000 (A)
	Total	<u>51,000 (A)</u>

**Illustration 20**

You are required to calculate sales variances with reference to profit from the under mentioned details:

Product	Standard			Actual		
	Qty	Profit Rs.	Amount Rs.	Qty	Profit Rs.	Amount Rs.
A	700	7	4900	900	2	1,800
B	300	2	600	600	4	2,400
<b>Total</b>	<b>1000</b>		<b>5,500</b>	<b>1500</b>		<b>4,200</b>

**Profit value variance :**  $[SQ \times SP] - [AQ \times AP]$  Rs.

$$A = [700 \times 7] - [900 \times 2] = 3,100 \text{ (A)}$$

$$B = [300 \times 2] - [600 \times 4] = 1,800 \text{ (F)}$$

$$\text{Total} \quad \underline{\underline{1,300 \text{ (A)}}}$$

**Price or Profit variance :**  $[SP - AP] AQ$  Rs.

$$A = [7 - 2] 900 = 4,500 \text{ (A)}$$

$$B = [2 - 4] 600 = 1,200 \text{ (F)}$$

$$\text{Total} \quad \underline{\underline{3,300 \text{ (A)}}}$$

**Volume variance :**  $[SQ - AQ] SP$  Rs.

$$A = [700 - 900] 7 = 1,400 \text{ (F)}$$

$$B = [300 - 600] 2 = 600 \text{ (F)}$$

$$\text{Total} \quad \underline{\underline{2,000 \text{ (F)}}}$$

Mix variance :  $[RSQ - AQ] SP$

$$RSQ = \frac{SQ}{\text{TotalSQ}} \times AQ$$

$$A = \frac{700}{1,000} \times 1,500 = 1,050 \text{ units}$$

$$B = \frac{300}{1,000} \times 1,500 = 450 \text{ units}$$

**NOTES**

<b>Mix variance:</b>				Rs.
A	=	[ 1,050 – 900 ] 7	=	1,050 (A)
B	=	[ 450 – 600 ] 2	=	300(F)
Total				750 (A)
<b>Quantity variance :</b> [SQ - RSQ] SP				Rs.
A	=	[700 – 1,050 ] 7	=	2,450 (F)
B	=	[ 300 – 450 ] 2	=	300 (F)
Total				2,750 (F)

**2.1.36 Summary**

Cost accounting is the application of costing and cost accounting principles, methods and techniques to the science, art and practice of cost control and the ascertainment of profitability.

Costing methods include (a) Job costing and (b) Process costing.

Techniques or types of costing signify the type of cost used in each of the above two costing methods. They include (i) Historical costing (ii) Standard costing (iii) Absorption costing (iv) Variable or Marginal costing (v) Uniform costing.

Value chain contains a sequence of well co-ordinated and integrated business functions in which usefulness is added in each operation. A cost accountant analyses cost information relating to each function in the value chain and supplies to respective functional heads for their well informed and sound decision making.

Activity based costing and target costing are innovative concepts in costing. Activity based costing focuses on the activities involved in producing a product or service. Target costing involves setting a target cost by subtracting a desired profit margin from a competitive selling price and then producing the product within the target cost. Costs can be classified according to (a) Nature (b) Variability (c) Association with the product (d) Degree of control.

Cost sheet is a statement prepared at periodic intervals, which shows the total cost classified under proper heads in a logical manner.

Cost-volume-profit analysis or Marginal costing is concerned with ascertainment of marginal cost and of the effect on profit of changes in volume or type of output by differentiating between fixed and variable costs.

Concepts associated with Marginal Costing include (i) Sales (ii) Variable Cost (iii) Fixed cost (iv) contribution (v) Profit-volume Ratio (vi) Key Factor (vii) Break even Point (viii) Margin of Safety (ix) Angle of Incidence.

Break Even analysis is concerned with computation of Break-Even point and studying the relationship between cost, sales and profit at different levels of activity.

Break Even chart is a graphical representation of Cost –volume- profit analysis.

Standard costing is the preparation and use of standard costs, their comparison with actual costs and the analysis of variances to their causes and point of incidence.

Variance is the difference between standard cost and actual cost.

Variance analysis is the process of analysing the variances in such a way that the causes for the deviations are identified and responsibility fixed for such deviations.

Variances can be analysed for (a) Material (b) Labour (c) Overhead costs and (d) Sales activities.

### 2.1.37 Multiple choice questions

Choose the correct answer to the following:

**1) Basic objective of cost accounting is**

- (a) Tax compliance (b) Financial compliance  
(c) Cost ascertainment (d) None of these.

**2) Overhead cost is the total of**

- (a) All indirect cost (b) All direct cost  
(c) Direct and indirect cost (d) Specific cost

**3) Process costing is suitable for**

- (a) Hospitals (b) Transport companies  
(c) Oil refineries (d) Brick laying firms

**4) Cost classification can be done in**

- (a) Two ways (b) Three ways (c) Four ways (d) Several ways.

**5) Variable cost per unit**

- (a) Remains fixed (b) Fluctuates with volume of production  
(c) Varies in line with volume of sales (d) Constantly varies

**6) Fixed cost per unit decreases when**

- (a) Production volume decreases  
(b) Production volume increases  
(c) Variable cost per unit increases  
(d) None of these.

**NOTES**

- 7) **The type of costing most suitable for cost control purpose is**  
 (a) Standard costing (b) Continuous costing  
 (c) Post costing (d) None of these
- 8) **Standard costs are**  
 (a) Ideal costs (b) Normal costs  
 (c) Average costs (d) Reasonable attainable costs
- 9) **An organisation using ideal standards for standard costing purposes, should expect that**  
 (a) Most variances will be unfavorable  
 (b) Most variances will be favorable  
 (c) Employees will be strongly motivated for achieving the standard  
 (d) Larger incentive bonus will have to be paid
- 10) **Direct material price variance is**  
 (a) Standard rate with the difference between standard quantity and actual quantity  
 (b) Actual rate with the difference between standard and actual rate  
 (c) Actual quantity with the difference between standard and actual rate  
 (d) None of these.
- 11) **Period cost refers to**  
 (a) Variable cost (b) Prime cost (c) Indirect cost (d) Fixed cost
- 12) **Contribution is also called**  
 (a) Gross profit (b) Net income (c) Marginal income (d) None of these
- 13) **Fixed factory overhead are added to inventory under**  
 (a) Direct costing (b) Marginal costing  
 (c) Absorption costing (d) Job costing
- 14) **Job costing is suitable for**  
 (a) Mass production concern (b) specific order concerns  
 (c) All concerns (d) Processing concerns
- 15) **Steps involved for installation of ABC in a manufacturing company include the following except**  
 (a) Borrowing fund  
 (b) feasibility study  
 (c) Setting of IT infrastructure and training of employees  
 (d) Strategy and value chain analysis

**16) Under marginal costing**

- (a) All costs are classified into two groups- variable and fixed
- (b) Variable costs form part of the product cost and inventory valuation
- (c) Fixed costs are treated as period costs
- (d) All of the above

**17) BEP is a point at which**

- (a) Total profit equals total costs
- (b) Total contribution equals total fixed costs
- (c) Total contribution equal total overheads
- (d) Total variable costs equal total revenue.

**18) With regard to Break even charts and Break even analysis, which of the following is true?**

- (a) It is assumed that variable costs fluctuates in direct proportion with output
- (b) BEP is at the inter section of sales line and variable cost line
- (c) Break even chart shows the maximum profit possible
- (d) None of these

**19) Cost can be classified according to**

- (a) Elements      (b) Functions      (c) Behavior      (d) All of the above

**20) Prime cost is**

- (a) Total of direct costs      (b) All costs incurred in manufacturing a product
- (c) All material cost of a product      (d) Cost of operating a department

**Answers:**

- 1.c   2.a   3.c   4.d   5.a   6.b   7.a   8.d   9.a   10.c  
 11.d   12.c   13.c   14.b   15.a   16.d   17.b   18.a   19.d   20.a

**2.1.38 Short Questions**

- 1) What is cost accounting?
- 2) What is ABC?
- 3) What do you understand by Target costing?
- 4) What are Standard costs?
- 5) Define standard costing.
- 6) Define Marginal costing.
- 7) Bring out the difference between Fixed and Variable costs.
- 8) What is BEP?

**NOTES**

- 9) What is meant by Angle of Incidence?
- 10) Explain Break Even Chart.
- 11) What is Absorption Costing?
- 12) What is Value chain?
- 13) What are Joint cost and common cost?
- 14) What is a Cost sheet?
- 15) Distinguish between Cost Unit and Cost Centre.
- 16) What is Marginal cost equation?
- 17) What is limiting factor or Key Factor?
- 18) What is P/V Ratio?
- 19) What is MOS?
- 20) What is Variance Analysis?
- 21) Ascertain the cost and selling price from the following:

Materials consumed                      Rs.6,000.

Wages paid                                      Rs.9,000

- a. Works on cost 50% on wages.
- b. Office on cost 20% on work cost.
- c. Selling on cost 10% on work cost
- d. Profit 20% on cost.

Ans: Sales Rs.30,420

Prepare a cost sheet from the following data to find out profit and cost per unit.

	Rs.		Rs.
Raw materials consumed	1,60,000	Selling overheads	12,000
Direct wages	80,000	Unit produced	4,000
Factory overheads	16,000	Units sold	3,600
Office overhead 10% of factory cost		Selling price Rs. 100 per unit.	

Hints: Units produced 4,000

Units sold 3,600

Ans: **Profit Rs. 94,560 ; Cost of sales Rs.2,65,440**

Closing units 400

22) The following data are obtained from the records of a company.

	First year Rs.	Second year Rs.
Sales	80,000	90,000
Profit	10,000	14,000

Calculate the BEP.

Ans: Rs. 55,000

23) From the following data calculate: (a) P/V ratio (b) MOS

	Rs.	
Sales	20,000	
Variable expenses	10,000	
Fixed expenses	6,000	Ans: (a):50% (b): Rs.8,000

24) Following data are given to you:

Particulars	Standard	Actual
Output (in units)	5,000	4,000
Fixed overheads(Rs)	3,000	3,000
Variable overheads (Rs)	2,000	3,000

Calculate total overhead cost variance

Ans: Rs. 2,000 (A)

### 2.1.39 Long Questions

- 1) Distinguish between cost, costing and cost accounting
- 2) Explain the various methods of costing
- 3) Discuss the various techniques of costing
- 4) Explain the various classification of costs
- 5) What are the features of Marginal costing?
- 6) Sketch the advantages and limitations of Marginal costing
- 7) Explain the various terms and concepts associated with CVP analysis
- 8) What are the assumptions underlying Break Even Charts?
- 9) What are the advantages and limitations of Break Even Charts?
- 10) Explain the steps involved in Standard Costing.
- 11) Discuss the advantages and limitations of Standard Costing.
- 12) Two competing companies HERO Ltd. and ZERO Ltd., sell the same type of product in the same market. Their forecasted profit and loss accounts for the year ending Dec.1990 are as follows.

**NOTES**

	HERO Ltd		ZERO Ltd	
	Rs.	Rs.	Rs.	Rs.
Sales		5,00,000		5,00,000
<b>Less: Variable cost</b>	4,00,000		3,00,000	
Fixed cost	50,000	4,50,000	1,50,000	4,50,000
Profit		50,000		50,000

You are required to state which company is likely to earn greater profits in conditions of:

- (a) Low demand and (b) High demand

**Ans: Hero: P/V R: 20%; BEP: Rs.2,50,000; Zero : P/V R: 40% ; BEP: Rs.3,75,000;**

**Low demand: Hero Ltd. earns greater profit; High demand: Zero Ltd .earns greater profit.**

13) Devi Ltd. manufactures and sells four types of products under the brand names of A, B, C and D. The sales mix in value comprises 25%, 20%, 40% and 15% of products A, B, C and D respectively. The total budgeted sales (100%) are Rs. 80,00,000 per month

Operating costs are:

Variable cost:

Product A 20% of selling price

Product B 60% of selling price

Product C 20% of selling price

Product D 40% of selling price

Fixed cost: Rs.34,500 per month.

Calculate the Break Even Point for the products on an overall basis and also the break even sales for individual products. Show the proof of your answer.

**Ans: Composite P/V Ratio : 69%; Composite BEP : Rs. 50,000**

14) The following particulars are taken from the records of a company engaged in manufacturing two products X and Y from a certain raw materials.

	Product X Rs. P.U.	Product Y Rs. P.U.
Sales	125.00	250.00
Material Cost ( Rs. 2.5 per k.g)	25.00	62.50
Wages (Rs. 15 per hour)	37.50	75.00
Variable overhead	12.50	25.00

## NOTES

Total fixed overheads Rs. 50,000

Comment on the profitability of each product when:

- Total availability of raw material is 20,000 kgs and maximum sales potential of each product is 1,000 units. Find the product mix to yield maximum profit. Determine the maximum profit.
- Total sales in value is limited
- Labour time is limited
- Production capacity in units is a key factor.

[ Ans: (a) product X is more profitable ; Product mix : X 1,000 units; Y: 400 units; Total contribution : Rs. 85,000 ; Maximum profit: Rs.35,000:

(b) Product X is more profitable: P/V ratio: X:40% ; Y:35%

(c) Product X is more profitable than Y: contribution per hour: X:Rs.20; Y: Rs.17.5;

(d) product Y is more profitable: contribution per unit:X: Rs.50; Y: Rs.87.5]

15) A company producing 40,000 units of product X working at 80% capacity receives an order from a foreign dealer for 10,000 units as Rs. 50 per unit although the local price is Rs. 60 per unit. The cost data are as follows:

	Rs.
Material	20
Labour:	
Skilled (fixed)	10
Unskilled labour	10
Variable overhead	10
Fixed overhead	20
<b>Total cost per units</b>	<b>70</b>

Advise the management whether to accept the order or not.

**Ans: Accept the order as it will increase the profit by Rs.1,00,000**

16) From the following data, calculate Break –even point in units and also the new BEP, if selling price is reduced by 10%.

Fixed expenses	Rs.	Variable expenses Per unit	Rs.
Depreciation	1,00,000	Material	3
Salaries	1,00,000	Labour	2
		Selling price	10

**Ans: BEP: 40,000units;New BEP:50,000 units**

**NOTES**

17) You are given, margin of safety Rs.10,000 which represents 40% of sales. P/V ratio-50%. Calculate:

(a) Sales (b) Break Even Sales (c) Fixed cost (d) Profit

**Ans: Sales :Rs.25,000; BEP :Rs.15,000;**

**Fixed cost :Rs.75,000 ; Profit: Rs.5,000**

18) A company has a contribution/sales ratio of 40% . It maintains a margin of safety of 20% . If its annual fixed costs amount to Rs.24 lakhs. Calculate its

(i)Break even sales (ii) margin of safety

(iii) Total Sales (iv) Total variable cost and (v) profit

**Ans: BEP:Rs.60,00,000; MOS:Rs.15,00,000;**

**Sales:Rs.75,00,000;VC: Rs.45,00,000; Profit:Rs.6,00,000**

19) From the following information calculate:

(a) Material Cost Variance. (b) Material usage variance. (c) Material Price variance, separately for X and Y.

Material	Standard	Price	Actual	Price
	Qty (kg)	Rs.	Qty (kg)	Rs.
X	10	4	12	3.75
Y	15	5	18	4.50
	25		30	

**Ans: MCV:Rs.11(A) ; X:Rs.5(A),Y:Rs.6(A); MPV:Rs.12(F);**

**X:Rs.3(F),Y:Rs.9(F); MUV:23(A); X :Rs.8(A),Y:Rs.15(A)**

20) A company manufactures a particular product the standard material cost of which is Rs. 15 per unit. The following information is obtained from the cost records.

Materials	Standard mix			Actual result		
	Quantity (units)	Rate Rs.	Amount Rs.	Quantity (units)	Rate Rs.	Amount Rs.
A	60	20	1,200	700	19	13,300
B	40	10	400	300	11	3,300
Loss 20%	100 20		1,600 -	1,000 100 (loss 10%)		16,600 -
	80		1,600	900		16,600

Calculate:

- i) Material price variance ii) material mix variance iii) Material usage variance  
iv) Material yield variance v) material cost variance.

**Ans : MCV:Rs.1,400(F); A: Rs.200 (F),B:Rs.1,200(F); MPV:Rs.400(F):  
A:Rs.700(F),B:Rs.300(A);MUV:1000(F);A:Rs.500(A),  
B:Rs.1,500(F);MMV:Rs.1,000(A);A:Rs.2,000(A), B:Rs.1,000(F);  
MYV:Rs.2000(F);SQ:A:675;B:450;RSQ:A:600;B:400**

#### 2.1.40 Text Books for the Chapter

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## 2.2 MANAGEMENT ACCOUNTING

### 2.2.1 Introduction

Decision making is one of the important functions of a manager. While making decisions, he has to consider only relevant cost and relevant revenues. He has to use budgetary control system for planning and controlling the operations of his organisation. The manager has to take responsibility for performance deviation from the target through responsibility accounting. He should also use various tools for measuring and evaluating the performance level of his unit. This unit deals with the above.

# NOTES

## 2.2.2 Learning Objectives

After going through this chapter, the reader is expected to:-

- Understand the meaning of relevant cost and relevant revenues considered in decision making.
- Comprehend the meaning of Differential analysis and techniques used in different decision making situations.
- Become aware of the meaning of responsibility Accounting and its practical application and the performance evaluation tools.
- Understand the meaning of budgetary control various classifications of budgets and nuances involved in the preparation of various budgets.
- Assimilate the meaning of Zero Base Budgeting and control ratios.

## 2.2.3 Relevant Cost for Decision Making

### DECISION MAKING:

It refers to the process of evaluation and choosing a particular course of action from among two or more alternatives.

For evaluating alternative, costs and revenues are very important. But not all costs and revenues are relevant. Only some costs and some revenues are relevant.

## 2.2.4 Relevant Cost and Relevant Revenues

Relevant means 'Pertinent to decision making situation at hand'. Some costs and few revenues have a bearing on the decision making situation at hand. Such costs and revenues are called relevant cost and relevant revenues.

Relevant costs are estimated future costs that differ among alternatives. If costs do not differ among alternatives, then they become irrelevant to the situation. Because of the varying nature of cost, relevant costs are also known as Differential cost. Such differential cost is ascertained by comparing the cost between two or more alternatives.

Relevant revenues are estimated future revenues that differ among alternatives. It is also referred to as Differential revenue. Such Differential revenue [incremental/detrimental] is ascertained by comparing the revenues between to alternatives.

## 2.2.5 Incremental Analysis or Differential Analysis

Under this system, a comparison is made between the cost differential and income differential between two or more situations, and decision revenue exceeds incremental cost.

**NOTES**

The system involves the following steps.

- i. Incremental cost is computed by comparing the total cost of each alternative.
- ii. Incremental revenue is also calculated by comparing the total income of each alternative.
- iii. Difference between incremental revenue and incremental cost is ascertained. Such Difference is called "Net Increment".
- iv. Positive 'Net Increment' is a green signal for under taking the proposal.

**Illustration 1**

A company wants to ascertain the price at which it can introduce its produce. You are supplied the following information.

Probable Demand [units]	Selling price Per Unit Rs.	Total cost [Fixed + Variable] Rs.
250	9.50	3500
500	9.00	4875
750	8.50	6218
1000	8.00	7000
1250	7.00	9093
1500	6.00	10312
1750	5.00	11531
2000	4.00	12750

Give your recommendation to the company. All workings should form part of your answer.

Sales [units]	Selling Price Per unit Rs.	Sales Revenue Rs. (1)*(2)	Incremental Sales Rs. (S-P)	Total cost Rs. (F+V)	Incremental Cost Rs. (S-P)	Net Increment Rs. (4)-(6)
250	9.50	2375	-	3500	-	-
500	9.00	4500	2125	4875	1375	750
750	8.50	6375	1875	6218	1343	532
1000	8.00	8000	1625	7000	782	843
1250	7.00	8750	750	9093	2093	-1343
1500	6.00	9000	250	10312	1219	-969
1750	5.00	8750	-250	11531	1219	-1469
2000	4.00	8000	-750	12750	1219	-1969

S-Succeeding Amount

p-Previous Amount

The company should introduce it produce at Rs.8 per unit to maximize its profit.

# NOTES

## 2.2.6 Special Order Decision

Accepting or Rejecting a special order arises when there is idle production capacity and when such order is unlikely to affect present sales, either in terms of selling price or volume of sales.

Utilization of idle capacity does not increase or decrease the fixed cost, but entails only additional variable cost. Thus, fixed cost becomes irrelevant cost to determine the impact on current profit.

### Illustraton 2

Abba Ltd has a production capacity of 4000 units. It is currently operating at 75% capacity and sells its products at Rs.18 per unit. The cost of the product is given below:

	Rs. (Per Unit)
Direct Materials	5
Direct Labour	2
Manufacturing overhead (40% variable)	5
Marketing costs(50% variable)	<u>4</u>
	<u>16</u>

The company has received a special order for 500 units at Rs.14 per unit. The additional 500 units can be produced using the available idle capacity. The special order price will not have any impact on the regular marker of Abba Ltd. But the additional units will require a special packing at a cost of re.1 per unit.

Should the order be accepted? What will be the impact on the company's current profit?

### Solution:

1)	2)	3)	4)	5)	6)
Particulars	Revenue Rs.	Incremental Revenue Rs.	Cost Rs.	Incremental cost Rs.	Net Incremental Revenue Rs. (2)-(4)
Current	54000 (A)	-	33000 (C)	-	-
Total, if proposal is accepted	61000 (B)	7000	39000 (D)	6000	1000

If the order is accepted it will yield an additional profit of Rs.1000. The operating profit of the company will also go up by Rs.1000.

### WORKING NOTE:

Present capacity is 75% of 4000 units. (i.e.) 3000 units.

### Revenue

	UNITS	SELLING PRICE PER UNIT	Rs.
(A)	3000	18	54000
(B)	3000	18	54000
	500	14	7000
		COST	
(C)	3000	11	33000
(D)	3000	11	33000
	500	12	6000

<u>COST PER UNIT</u>	Rs.
Direct Material	5
Direct Labour	2
Variable Manufacturing O.M.	2
Variable Marketing cost	2
Packing cost	1
	<u>12</u>

### 2.2.7 Production Constraint Decisions

Production constraints factors are those that restrict production. They are called as key factor. They refer to any resources which are in short supply. E.g.: Raw materials, skilled labour, capacity of machines, etc.,

In such situations, contribution per unit of the limiting factor is calculated. Products which yield the highest contribution margin are produced to the maximum, in order to maximize profit. In case of multiple constraints, decision can be arrived at using optimization techniques, like liner programming technique.

### Illustration 3

A company engaged in plantation activities has 200 hectares of virgin land which can be used for growing jointly or individually tea, coffee and cardamom. The yield per hectare of the different crops and their selling price per kg are as follows:-

**NOTES**

Total fixed cost per annum is Rs. 18,00,000.

The policy of the company is to produce and sell all the three kinds of products and the maximum and minimum area to be cultivated for product is as follows.

Particulars	Maximum Area [hectares]	Minimum area [hectares]
Tea	160	120
coffee	50	30
cardamom	30	10

Calculate the priority of production, the most profitable product mix and the maximum profit which can be achieved.

**SOLUTION:**

## 1) Priority of production

1)	2)	3)	4)	5)	6)	7)
Particulars	Selling Price Per Kg Rs.	Variable Cost Per Kg Rs.	Contribution Per kg Rs.	Yield per Hectare (kgs)	Contribution Per hectare Rs.	Priority
Tea	20	14	6	2000	12,000	II
coffee	40	13	27	500	13,500	I
cardamom	250	150	100	100	10,000	III

## Profitable product mix

1)	2)	3)	4)	5)
Particulars	Minimum Area [hectares]	Balance Available [hectares]	Allocation of Balance Land as per priority	Profitable Product Mix [hectares] (2) + (4)
Tea	120	-	20 [ II priority]	140
coffee	30	-	20 [ I priority- allot minimum]	50
cardamom	10	-	-	10
Total	160	40 [200- 160]	40	200

## Profitability statement

Particulars	Allocation land	contribution per hectare Rs.	Rs.
Tea	140	12,000	16,80,000
coffee	50	13,500	6,75,000
cardamom	10	10,000	1,00,000
	Total contribution		24,55,000
	(-) fixed cost		18,00,000
	<b>Profit</b>		<b>6,55,000</b>

**NOTES****2.2.8 Joint Product Decision**

Joint products are products of equal importance produced simultaneously by common processing. For example, products produced from oil refining.

By products are those which result incidentally while manufacturing main product or main products. In comparison with major product, by products have insignificant sale value.

Costs incurred commonly prior to the split-off point are called joint costs. Cost incurred individually after the split-off cost.

Products can be sold at split-off point or after further processing. If sold immediately at split-off point, its cost will contain apportioned joint cost. If sold after further processing; its cost will consist of apportioned joint cost and individual further processing cost.

**Illustration 4**

AB Ltd. Produces four joint products at a joint cost of Rs. 4,00,000. The products are currently processed beyond the split-off point, and the final products are sold as follows:-

Products	Sales Rs.	Additional Processing Cost Rs.
P	9,00,000	5,50,000
Q	6,60,000	3,00,000
R	2,60,000	2,00,000
S	60,000	70,000

## NOTES

The firm could sell the products at the split-off point for the following amounts:-

P	4,00,000
Q	1,80,000
R	50,000
S	Nil

You are required to (i) determine which products the firm should sell at the split-off point. (ii) Calculate the size of firm's profits if the firm has taken the most profitable action with respect to each of its products.

### SOLUTION:-

1)	2) Sales value if		3)	4)	5)
Product	sold at Split-off point Rs.	Sold After further Processing Rs.	Incremental Revenue Rs.	Further Processing Cost Rs.	Net Revenue Rs. (3) –(4)
P	4,00,000	9,00,000	5,00,000	5,50,000	-50,000
Q	1,80,000	6,60,000	4,80,000	3,00,000	1,80,000
R	50,000	2,60,000	2,10,000	2,00,000	10,000
S	Nil	60,000	60,000	70,000	-10,000

Products Q and R should be processed further as they generate net revenue.

Product P should be sold at split-off point.

Product S should not be processed.

Profitability statement with optimal processing

Particulars	P Rs.	Q Rs.	R Rs.	Total Rs.
Sales	4,00,000	6,60,000	2,60,000	13,20,000
(-) Further processing cost	-	3,00,000	2,00,000	5,00,000
Margin	4,00,000	3,60,000	60,000	8,20,000
(-) joint cost	-	-	-	4,00,000
<b>Profit</b>	-	-	-	<b>4,20,000</b>

### 2.2.9 Make or Buy Decision

Decision in this regard should be taken on the basis of variable cost only. Fixed cost will not be considered as it will be incurred whether the product is manufactured or purchased.

**Illustration 5**

A manufacturing company finds that while costs of making a component part as Rs.20 the same is available in the market at Rs.18 with and assurance of continuous supply. Give your suggestion whether to make or buy this part. Give also your views in case the supplier reduces the price from Rs. 18 to Rs.16

The cost structure of the component is as follows:-

	Rs.
Materials	7.00
Direct labour	8.00
Variable expenses	2.00
Fixed expenses	3.00

**Solution:**

Decision should be taken based on variable cost and not on fixed cost, as it will be incurred whether the products is manufactured or purchased.

Total variable cost of manufacturing the products is:-

	Rs.
Materials	7.00
Direct labour	8.00
Variable expenses	2.00

- (a) Variable cost of manufacture is Rs.17 per unit purchase price is Rs.18.

The product should be manufactured as the cost is less.

- (b) Variable cost of manufacturing is Rs.17 purchase price is Rs.16.

Since the purchase price is less, the product should be bought.

**2.2.10 Sell, Scrap or Re-Build Decisions**

Decisions regarding the above should be made with respective to the contributions made by the respective products or division.

**Illustration 6**

X ltd has three products with respective to which it gives you the following data:-

# NOTES

Particulars	P Rs.	Q Rs.	R Rs.
Sales	12,000	18,000	20,000
(-) Marginal Cost	13,000	6,000	15,000
(-) Fixed Cost	1,000	4,000	10,000
<b>Profit/Loss</b>	<b>-2,000</b>	<b>8,000</b>	<b>-5,000</b>

The management wants to scrap product R as it gives the maximum loss. What is your advice to the management? Also re-build the product portfolio in such way as to eliminate loss and increase profit.

### Solution:

#### MARGINAL COST STATEMENT

Particulars	P Rs.	Q Rs.	R Rs.	Total Rs.
Sales	12,000	18,000	20,000	50,000
(-) Variable Cost	13,000	6,000	15,000	34,000
Contribution	-1,000	12,000	5,000	16,000
(-) Fixed cost	-	-	-	15,000
<b>Profit</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>1000</b>

Product R gives a contribution of Rs.5000. Hence it should not be discontinued. If eliminated, it will yield an overall loss of Rs.4000.

Instead, the company can stop manufacturing product P as it gives a negative contribution, and the overall profit will increase to Rs.2000 as shown below:-

Rebuild product portfolio income statement.

Particulars	Q Rs.	R Rs.	Total Rs.
Sales	18,000	20,000	38,000
(-) Variable Cost	6,000	15,000	21,000
Contribution	12,000	5,000	17,000
(-) Fixed cost	-	-	15,000
<b>Profit</b>	<b>-</b>	<b>-</b>	<b>2,000</b>

### 2.2.11 Responsibility Accounting

Responsibility accounting is a system of control in which targets are fixed for responsibility centers in an organisation commensurate with the overall objectives of the

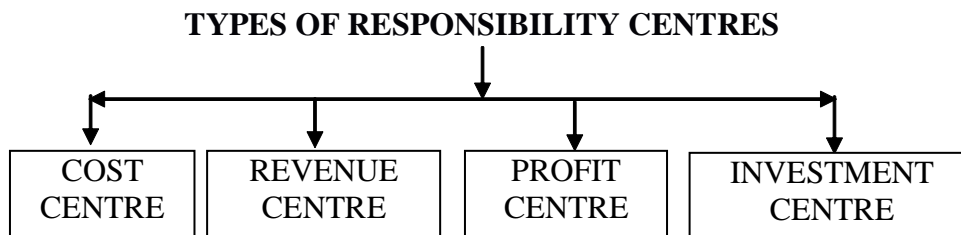
concern, and responsibility for the variances are fixed on managers and suitable corrective measures are initiated.

In the words of Robert Anthony, “responsibility accounting is that type of management accounting that collects and reports both planned and actual accounting information in terms of responsibility centers”.

The focal point of responsibility accounting is responsibility centers. Responsibility center is a sub-division of an organization headed by a manager who is made responsible for that center.

### 2.2.12 Types of Responsibility Centres.

There are four types of responsibility centres as shown below:-



- I. Cost centre: it is a centre where financial performance is measured in terms of cost only as revenues are not earned by the centre. Examples are service centres and maintenance centres.
- II. Revenue centre: it is a segment which is primarily responsible for generating sales revenue. Examples are sales department, or an individual salesman.
- III. Profit centre: where both cost and revenues can be accumulated for a centre, it is referred to a profit centre. Its managers are responsible both for cost and revenue of that centre.
- IV. Investment centre: it is a centre which is responsible for cost, revenue and the amount invested in the centre's assets. The head of such a centre is responsible for earning satisfactory return of its investment.

### 2.2.13 Steps Involved in Responsibility Accounting.

- i. Dividing the organisation into different responsibility centres.
- ii. Fixing the target or budget for each centre
- iii. Defining the responsibility of each manager. While doing so, a distinction should be made between controllable and uncontrollable factors, and the executives should be made responsible for controllable factors alone.
- iv. Accounting for expenses, revenues and profit of each centre.
- v. Comparing the actual with their respective targets.
- vi. Deviations are analyzed to fix responsibility.

# NOTES

- vii. Corrective action is initiated by the top management and is communicated to the respective centre, so that they may improve their future performance.

## 2.2.14 Advantages of Responsibility Accounting

- i. Facilitates good control.
- ii. Creates cost consciousness as supervisory staffs are called to give reason for the deviations in their centres.
- iii. Since responsibility of each centres are clearly spelled out, managers cannot pass back unfavorable results.
- iv. As factors which are beyond the scope of individual responsibility are excluded, it facilitates simple and prompt reporting.

## 2.2.15 Problems Encountered in Introducing Responsibility Accounting

- I. Difficulties arise in defining responsibility centres, proper delegation of work, responsibility, accountability and proper allocation of cost.
- II. Analyzing the expenses into controllable and uncontrollable part is a cumbersome and tough task.

## 2.2.16 Performance Evaluation Technuques

The following techniques are used for evaluating the performance of responsibility centres:

- a. Variance analysis
- b. Contribution margin analysis
- c. Budgetary control
- d. Return of investment
- e. Ration analysis
- f. Residual income: This can be defined as the net income of the business over and above the acceptable rate of return.
- g. Bench marking: It is a process of comparing a firm's activities with the best practices or best performance found in the industry.
- h. Non-financial performance measures:
  - 1) Quality of the product
  - 2) Market leadership
  - 3) Product leadership
  - 4) Reliability of delivery schedules
  - 5) Labour turnover
  - 6) After sale service
  - 7) Minimization of scrap and losses
  - 8) Social responsibility, etc.

**2.2.17 Practical Illustration of Responsibility Accounting****NOTES****Illustration 7**

The standard variable cost per unit in the mixing department are as follows:

Direct material:	Rs.	Rs.
X- 5kgs at Rs.10 per kg	50	
Y- 5kgs at Rs.5 per kg	<u>25</u>	75
Direct labour – 2 hours at Rs.10 per hour		20
Variable overhead		<u>5</u>
		<u>100</u>

During the month of June, 1000 units were completed, and their cost details are as follows:-

Direct material:	Rs
X 70,000 kgs at Rs.10.50 per kg	7,35,000
Y 30,000 kgs at Rs.5 per kg	1,50,000
Direct labour- 2,400 hours at Rs.10 per hour	2,40,000
Variable overhead	<u>50,000</u>
	<u>11,75,000</u>

Using standard costs as the basis of assigning responsibility. The factory manager has charged the department supervisor with an unfavorable variance of Rs. 1,75,000 [i.e. Rs.11,75,000 – Rs.10,00,000 standard cost of 1000 units.]

The supervisor has represented that the charge for the unfavorable variance is unwarranted. The managing director desires you to review the performance report.

Your investigation reveals the following:-

- I. A slip up in the purchase department caused a shortage for material Y which required a substitution by material X.
- II. In protest against the discharge of an employee by the personnel manager, workers in the department staged a show down that lasted for several days.

You are required to prepare an analytical report to fix responsibility for unfavorable variance in the mixing department.

**NOTES**

(a) Analysis of material cost variances.

Standard for 10,000 units			Actual for 10,000 units			
	Kgs	Rate Rs.	Amount Rs.	Kgs	Rate Rs.	Amount Rs.
X	50,000	10	5,00,000	70,000	10.50	7,35,000
Y	50,000	5	2,50,000	30,000	5.00	1,50,000
		<b>Total</b>	<b>7,50,000</b>		<b>Total</b>	<b>8,85,000</b>

Material cost variance :  $[SQ \times SP] - [AQ \times AP]$  Rs.

$$X: [50,000 \times 10] - [70,000 \times 10.50] = 2,35,000 \text{ (A)}$$

$$Y: [50,000 \times 5] - [30,000 \times 5] = 1,00,000 \text{ (F)}$$

$$\text{TOTAL} = \underline{\underline{1,35,000 \text{ (A)}}}$$

Material Price Variance :  $[SP - AP] \times AQ$  Rs.

$$X: [10 - 10.50] \times 70,000 = 35,000 \text{ (A)}$$

$$Y: [5 - 5] \times 30,000 = 0$$

$$\text{TOTAL} = \underline{\underline{35,000 \text{ (A)}}}$$

Material Quantity Variance :  $[SR - AR] \times SQ$  Rs.

$$X: [50,000 - 70,000] \times 10 = 2,00,000 \text{ (A)}$$

$$Y: [50,000 - 30,000] \times 5 = 1,00,000 \text{ (F)}$$

$$\text{TOTAL} = \underline{\underline{1,00,000 \text{ (A)}}}$$

(b) Analysis of labour cost variances

Standard for 10,000 units			Actual for 10,000 units		
Kgs	Rate Rs.	Amount Rs.	Kgs	Rate Rs.	Amount Rs.
20,000	10	2,00,000	24,000	10	2,40,000

Labour cost variance :  $[SH \times SR] - [AH \times AR]$   
 $[20,000 \times 10] - [24,000 \times 10]$   
 $= 40,000 \text{ (A)}$

Labour rate Variance :  $[SR - AR] \times AH$   
 $[10 - 10] \times 24,000$

$$= 0 \text{ (A)}$$

Labour efficiency Variance:  $[\text{SH} - \text{AH}] \text{ SR}$   
 $[ 20,000 - 24,000 ] 10$   
 $= 40,000 \text{ (A)}$

REPORT: Analysis of the performance reveals an adverse material cost variance of Rs. 1, 35, 000. Of this, unfavorable material quantity variance amounts to Rs. 1, 00,000 for which mixing department and purchase department are responsible. Purchase manager should be made responsible for adverse material price variance.

For the adverse labour efficiency variance of Rs.40, 000 resulting from slow down of work, responsibility should be assigned to the personnel department.

In short, the responsibility for poor performance cannot be attributed fully to mixing department alone, but should be shared jointly by mixing, purchase and personnel department.

## BUDGET AND BUDGETARY CONTROL

### 2.2.18 Definition of Budget

A budget is a plan of action expressed in rupees or units [like hours, kgs, liters, etc.,]. Such plan of action may relate to production, sales, cash operation, cost and profit. It helps management in planning and controlling the various functions in a business.

According to ICMA, a budget is “a financial and/or quantitative statement, prepared and approved prior to a defined period of time, of the policy to be perused during the period for the purpose of attention a given objective”

### 2.2.19 Budgetary Control

In the word of ICMA, budgetary control is, “the establishment of budgets relating to the responsibility of executive to the requirement of a policy and the continuous comparison of actual with budgeted result either to secure by individual action the objectives of that policy or to provide a basic for its revision”

### 2.2.20 Objectives of Budgetary Control

1. To define the objectives of the organisation in clear cut terms.
2. To plan and control the active of all the department in the company.
3. To bring about co-ordination among the activities of various departments.
4. To promote cost consciousness among employees
5. To fix responsibility for performance.
6. To facilitate efficient utilization of scarred resources.
7. Minimize cost and maximize perfect.

**NOTES****2.2.21 Steps Involved in Budgetary Control**

1. Preparation of budgets.
2. Sizing up of actual performance.
3. Comparison of actual with budgeted result.
4. Computation of variance and analyzing to their cause and point of incidence.
5. Incitation of corrective measures.
6. Revision of budgets as deemed bit.

**2.2.22 Advantage of Budgetary Control**

1. Facilitates goal fixation which in turn directs the activates of the organisation.
2. Facilitates co-ordination among the activities of an organisation.
3. Helps in establishing control.
4. Aids in fixing responsibility for the deviation of the actual from the planned task.
5. Provides a basic for revision of succeeding budget in the light of present performance.
6. Helps in cost reduction and containing idle time and wages.
7. Facilitates optimum utilization of resources.
8. Facilitates maximization of profit by ensuring effective utilization of resources reduction of cost and improved productivity.
9. Provides a basic for introduction incentive remuneration plane on the basic of performance
10. Indicates where action is needed to solve problem quickly.
11. Facilitates introduction of standard costing.
12. Acts as an internal audit by a continuous evaluation of departmental results.

**2.2.23 Limitation of Budgetary Control**

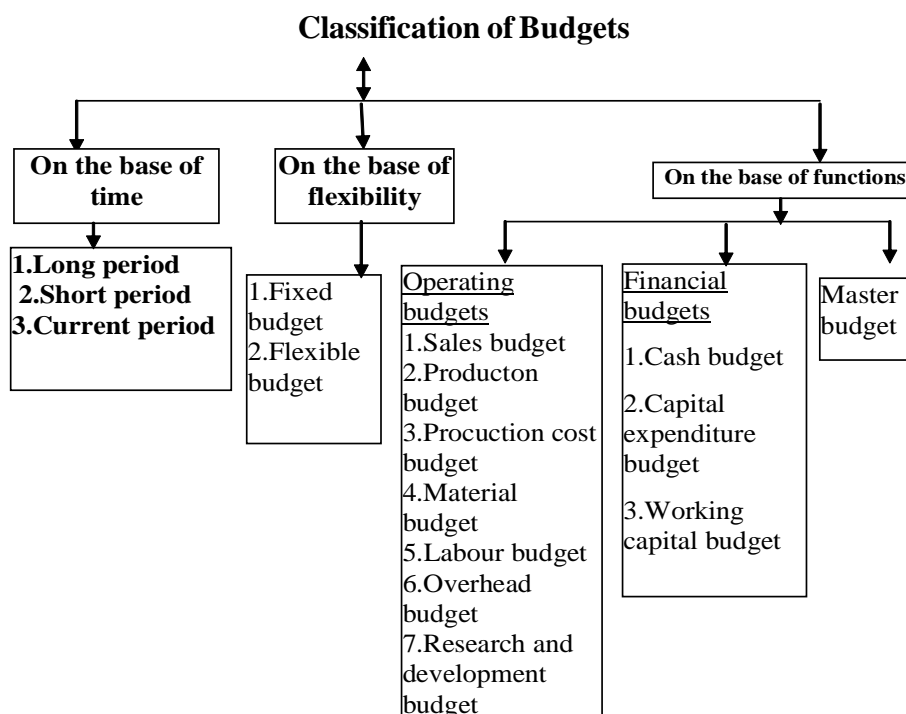
1. Budget relates to furtive period which is uncertain. Since it uses approximations and judgment, it may not be accurate.
2. Costly and time consuming exercise.
3. Preparing a budget under inflationary condition and changing government attitudes is really a daunting task.
4. Success of the system requires the co-ordination of all departmental heads, which many a time poses a problem.
5. It is only a management tool and does not substitute management.
6. Employees may resist as the system points out their in efficiency or efficiency.

### 2.2.24 Organisation for Budgetary Control or Establishing Organisation For Budgetary Control

- (1) **Budget Center:** It is a segment of the organisation for which budget is prepared. For example, sales department, in respect of which a sales budget is prepared, is a budget centre.
- (2) **Organisation Chart:** It is a chart which shows the functional responsibility of each member of the management and their relationship with each other.
- (3) **Budget Controller / Budget Officer:** He is the person who acts as a coordinator for the budgetary control system.
- (4) **Budget Committee:** It consists of heads of various departments entrusted with the responsibility of preparing and finalization of budgets for various budgets centers and also for a comprehensive budget called master budget.
- (5) **Budget Manual:** It is a booklet which sets out the details of measures relating to budgetary control, like, objectives of budgetary control functional relationship duties and responsibilities of all member involved, form and record required and procedure for main item etc..
- (6) **Budget Period:** It is the period for which budget is period, generally a year.
- (7) **Key Budget Factor:** It is the principal factor that determines or influences other factor in a significant way. Budget relating to the key factor is prepared first and based on this other will be prepared. For instance, if a sale is limited, sales budget will be prepared first and the other budgets are prepared based on this.

### 2.2.25 Classification of Budgets

Budget in common use can be classified as follows



# NOTES

## On The Basis Of Time

- 1) **Long Period Budget:** Budget relating to period of say 5 to 10 years are called long period budget. Examples are capital expenditure budget, R&D budget.
- 2) **Short Period Budget:** It relates to a period of usually one year. Examples are cash budget, production budget, working capital budget, etc..
- 3) **Current Budget:** They are meant for a very short period of a quarter or a month.

## On The Basis Of Flexibility

- 1) **Fixed Budget:** It is a budget designed to remain unchanged irrespective of the level of activity actually attained.
- 3) **Flexible Budget:** According to C.I.M.A, London, flexible budget is “a budget which, by recognizing the difference between fixed, semi-variable and variable cost is desired to change in relation to the of activity achieved.

## On The Basis Of Functions

### Operating Budgets

These relate to the operating activity of an organisation, like, sales, purchase etc. It includes the following:

- 1) **Sales Budget:** It gives the sales to be achieved during the period, in terms of division, type of products, quantity of each product and sales value. It is prepared by the sales manager.
- 2) **Production Budget:** It is an estimate of goods that must be produced during the budget period, in terms of division, type of product and quantity of each type. It is prepared by the production manager.
- 3) **Production Cost Budget:** It gives the total cost to be incurred for production during the budget period. Since production includes material, labour and overheads, the budget is divided accordingly into material cost budget, labour cost budget and overhead cost budget.
- 4) **Materials Budget:** This budget deals with only direct material requirement. Indirect materials are included in factory overheads budget. It gives an estimate of the materials required for production and an estimate of raw materials to be purchased.
- 5) **Labour Budget:** It gives an estimation of the different classes of labour required for each department, than pay rate, and the hours to be spent.
- 6) **Overhead Budgets:** It shows the details of overhead expenses likely to be incurred during the budget period, in terms of factory overhead, administration overhead, selling and distribution overhead.
- 7) **Research and Development Budget:** It gives details of the cost to be recurred in research and development likely to undertaken by the organisation during the budget period.

## Financial Budget

- 1) **Cash Budget:** It gives an estimate of receipts and payment of cash during the budget period. It is generally prepared for a year on a monthly basis for better control over inflows and outflows.
- 2) **Capital Expenditure Budget:** This budget shows the estimate expenditure on long terms assets, i.e. fixed assets, during the budget period. It is prepared by the finance manager or capital expenditure committee.
- 3) **Working Capital Budget:** It gives an estimation of the working capital requirement during the budget period. Working capital needs can be forecasted either by using,
  - (a) Operating cycle method.(or)
  - (b) Percentage of sales method. (or)
  - (c) Current assets and current liabilities method.

## Master Budget

According to C.I.M.A, London, master budget is “a summary budget, incorporating its component functional budget, which is finally approved, adopted and employed”. It gives an overall view of the expenses and income, profit and financial position in the form of projected profit and loss account and balance sheet.

### 2.2.26 Zero Base Budgetary [ZBB]

In the preparation of conventional budget, an amount is added to the immediate past years figures to allow for an increase in cost. This escalates the cost year after year while carrying forward the inefficiencies of the previous year to the budget year.

Zero Base Budgeting differ from the above past year is completely ignored and every year is taken as a new year, i.e. zero is taken as the base. Things will not be allowed just because it was allowed in the past. Manager must justify the need for his demand for money. .

**Peter A.Phyrr** defines ZBB as “a planning and budgeting process which required each manager to justify his entire budget request in detail from scratch [hence zero base] and shifts the burden of proof to each manager to justify why he should spend money at all. The approach requires that all activities be analyzed in decision packages which are evaluated by systematic analysis and ranked in the order of importance”.

### 2.2.27 Benefits of ZBB

- 1) Helps avoid unnecessary activities and expenses.
- 2) Facilitates efficient allocation of scare resources and thus ensures optimum utilization of resources.
- 3) Annual review impart flexibility to budgets.
- 4) It integrates the managerial functions of planning and controlling.

# NOTES

## 2.2.28 Limitations of Zbb

- i. It is costly and time consuming process.
- ii. It is applicable only to those functions where cost-benefit analysis can be done.
- iii. There may be opposition from management.

## 2.2.29 Control Ratios

These are ratios which compares budgeted hours, actual hours and standard time for actual production to measure the performance level. They are expressed as a percentage. Ratios greater than 100% are considered to be favorable.

There are four control ratios as given below:

$$(i) \text{ Capacity ratio} = \frac{\text{Actual hours}}{\text{Budgeted hours}} \times 100$$

$$(ii) \text{ Actirty} = \frac{\text{Standard hours for actual production}}{\text{Budgeted hours}} \times 100$$

$$(iii) \text{ Efficiency ratio} = \frac{\text{Standard hours for actual production}}{\text{Actual hours}} \times 100$$

$$(iv) \text{ Calendar ratio} = \frac{\text{No. Of actual working days}}{\text{Budgeted number of working days}} \times 100$$

### Illustration 8

Draw a production budget and material procurement budget from the following:-

Estimated sales of product 40,000 units, each unit of the product requires 3 units of material A and 5 units of material B.

Particulars	Estimated	
	Opening balance ( units )	Closing balance ( units )
Finished product	5,000	7,000
Material A	12,000	15,000
Material B	20,000	25,000
<b>Material on order:-</b>		
Material A	7,000	8,000
Material B	11,000	10,000

**NOTES****Solution:**

Production budget		units.
Estimated sales		40,000
Add: Closing Stock		7,000
		47,000
Less: Opening stock		5,000
Estimated Production	=	42,000

## Material Procurement Budget

Particulars	Raw Material	
	A (units)	B (units)
Estimated consumption A [42000 x 3], B [42000 x 5 ]	1,26,000	2,10,000
<b>Add:</b> expected closing stock	15,000	25,000
<b>Add:</b> closing material on order	8,000	10,000
	<b>1,49,000</b>	<b>2,45,000</b>
<b>Less:</b> opening stock	12,000	20,000
<b>Less:</b> opening materials on order	7,000	11,000
<b>Estimated Procurement</b>	<b>1,30,000</b>	<b>2,14,000</b>

**Illustration 9**

Ronald Ltd manufactures two products, A and B, and markets them through its three divisions.

The actual sales for the year 2008 are as follows:

Division	A [units] Rs. 10 per unit	B [units] Rs.5 per unit
	I	3,00,000
II	5,62,500	6,00,000
III	1,80,000	20,000

For the year 2009, it is estimated that by forced sales promotion, the sale of B in Division (I) will increase by 2, 00,000. It is also expected that by arranging extensive advertisement, division (III) will be able to increase the sale of B by 50,000 units.

It is agreed to increase the estimate of A and B by 20% in division (II).

**NOTES**

Prepare a sales budget for 2004.

**Solution :**

<b>Sales budget for 2009</b>					
<b>Division</b>	<b>A Rs.10 per unit</b>		<b>B Rs.5 per unit</b>		<b>Total Amount Rs.</b>
	<b>Units</b>	<b>Amount</b>	<b>Units</b>	<b>Amount</b>	
I	3,00,000	30,00,000	6,00,000	30,00,000	60,00,000
II	6,75,000	67,50,000	7,20,000	36,00,000	103,50,000
III	1,80,000	18,00,000	70,000	3,50,000	21,50,000
	<b>11,55,000</b>	<b>115,50,000</b>	<b>1,39,000</b>	<b>69,50,000</b>	<b>185,00,000</b>

**Illustration 10**

ABC Ltd wishes to arrange overdraft facilities with its bankers during the period April to June 2009. Prepare a cash budget for the above period from the following data, indicating the extent of bank facilities the company will require at the end of the each month:

<b>Month</b>	<b>Credit sales Rs.</b>	<b>Purchases Rs.</b>	<b>Wages Rs.</b>
<b>2009</b>			
<b>February</b>	180,000	1,24,800	12,000
<b>March</b>	1,92,000	1,44,000	14,000
<b>April</b>	1,08,000	2,43,000	11,000
<b>May</b>	1,74,000	2,46,000	10,000
<b>June</b>	1,26,000	2,68,000	15,000

50% of credit sales are realized in the month following the sales, and the balance 50% in the second month following:

Creditors and wages are paid in the month following the month of incident

Estimated cash balance on 1<sup>st</sup> April 2009 Rs.25,000.

**Solution:**

Cash budget for the three months ending June 2009

**Illustration 11**

Prepare a flexible budget for overhead expenses on the basis of the following data and determine the overhead at 70%, 80% and 90% plant capacity.

## NOTES

Particulars	80 % capacity Rs.
<b><u>Variable overheads:</u></b>	
Indirect labour	12,000
Indirect material	4,000
<b><u>Semi-variable overheads:</u></b>	
Power [30 % fixed]	20,000
Repairs [60 % fixed]	2,000
<b><u>Fixed overheads:</u></b>	
Depreciation	11,000
Insurance	3,000
Salaries	10,000
<b>Total</b>	<b>62,000</b>
<b>Estimated direct labour hours</b>	<b>1.24.000 hrs.</b>

Solution:

## FLEXIBLE BUDGET

Particulars	Capacity		
	70 % Rs.	80 % Rs.	90 % Rs.
<b><u>Variable overheads:</u></b>			
Indirect labour	10,500	12,000	13,500
Indirect material	35,000	4,000	4,500
<b><u>Semi-variable overheads:</u></b>			
Power [30 % fixed]	6,000	6,000	6,000
[70 % variable ]	12,250	14,000	15,750
Repairs [60 % fixed ]	1,200	1,200	1,200
[40 % variable]	700	800	900
<b><u>Fixed overheads:</u></b>			
Depreciation	11,000	11,000	11,000
Insurance	3,000	3,000	3,000
Salaries	10,000	10,000	10,000
<b>Total (A)</b>	<b>58,150</b>	<b>62,000</b>	<b>65,850</b>
<b>Direct labour hours (B)</b>	<b>1,08,500</b>	<b>1,24,000</b>	<b>1,39,500</b>
<b>Direct labour hour rate (A/B)</b>	<b>Rs.0.54</b>	<b>Rs. 0.50</b>	<b>Rs. 0.47</b>

# NOTES

## 2.2.30 Summary

Managerial decision making involves the use of relevant costs and relevant revenues. They are estimated future costs and future revenues which differ among alternatives.

Under differential analysis, a comparison is made between the cost differential and revenue differential between two or more situations, and decision is taken about an incremental cost.

The different decision making situation discussed in this unit are special order decision, product constraint decision, sell, scrap or re-build decision.

Responsibility accounting is a system of control in which targets are fixed for responsibility centres in an organisation commensurate with the overall objectives of the concern, and responsibility for the various are fixed on managers and suitable corrective measures are initiated.

Responsibility accounting revolves around responsibility centres. Responsibility centre is a segment of an organisation headed by manager who is made responsible for that centre.

There are four types of responsibility centres:

- (i) Cost centre
- (ii) Revenue centre
- (iii) Profit centre
- (iv) Investment centre.

A budget is a financial and or quantitative statement prepared in advance to a defined period of time.

Budgetary control is the establishment of budgets relating to the responsibilities of executives to the requirements of a policy and the continuous comparison of actual with budgeted results, other to secure by individual action the objectives of that policy or to provide a basis for its revision.

The organisation of budgetary control involve setting up of budget centre, organisational budget committee, budget period and key budget factor.

Budgets can be classified based on (a) time (b) flexibility (c) functions.

Control ratios are ratios used to measure the levels of performance.

\_\_\_\_\_ X \_\_\_\_\_

**2.2.31 Multiple Choice of Questions**

- 1. A budget which is prepared for a year is called**  
 (a) Current budget                      (b) short term budget  
 (c) Long-term budget                  (d) fixed budget
- 2. Pick the odd one out**  
 (a) Flexible budget                      (b) Sales budget  
 (b) Purchase budget                    (d) production budget
- 3. All future costs and revenues are relevant for decision making**  
 (a) True (b) False
- 4. The focal point of responsible accounting is**  
 (a) Cost centre                      (b) profit centre  
 (c) investment centre                  (d) responsibility centres
- 5. A master budget is**  
 (a) Budget for assets and liabilities                  (b) budget of profit or loss  
 (c) Budget for managerial                                  (d) budget for operation of the entire organisation
- 6. Consumption of raw material is based on**  
 (a) Production                      (b) sales  
 (c) Cash                                  (d) market
- 7. Purchase budget deals with purchase of**  
 (a) Fixed assets                      (b) office supplies.  
 (c) Raw materials                      (d) Finished goods.
- 8. Performance budget is**  
 (a) Laying down of objectives (b) Measurement of output in relation to input.  
 (c) Flexible budgeting                      (d) fixed budget
- 9. Budgeting is**  
 (a) A technique                      (b) a costing method.  
 (c) Same as standard costing                  (d) none of the above
- 10. Generally the following is the starting point for preparing various budgets:**  
 (a) Purchase budget                      (b) sales budget  
 (c) R & D budget                      (d) none of the above.

**ANSWERS**

1. (b)    2. (a)    3. (b)    4. (d)    5. (d)    6. (a)    7. (c)    8. (b)    9. (a)    10. (b)

**NOTES****2.2.32. Short Answer Questions**

- 1) What are relevant cost and relevant revenues?
- 2) What is differential analysis?
- 3) Distinguish between joint products and by-product
- 4) What is responsibility accounting?
- 5) Define responsibility centre.
- 6) Define budget and budgetary control.
- 7) What is a budget manual?
- 8) Briefly explain budget centre.
- 9) What do you understand by key budget factor?
- 10) What are control ratios?

**2.2.33 Long Answer Questions**

- 1) Explain the various steps involved in Incremental analysis.
- 2) Explain the various types of responsibility centres.
- 3) What are steps involved in responsibility accounting?
- 4) Briefly explain the various 'performance evaluation' techniques.
- 5) Bring out objectives and steps involved in budgetary control.
- 6) Sketch the advantages and limitations of budgetary control.
- 7) Explain the pre-requisite organisational requirements for establishment of budgetary control.
- 8) Discuss the various classifications of budgets.
- 9) Explain the benefits and limitations of ZBB.
- 10) Explain the various control ratios.
- 11) A manufacturing company submits the following figures of product X for the first quarter of 2003.

**Sales in units:**

January	50,000
February	40,000
March	60,000
Selling price per unit	Rs.100

Target of first quarter 2004:

- Selling units increase by 20 %
- Selling price increase by 10 %

**(Ans: Total units: 1,80,000; Rs.1,98,000)**

(12). Prepare a production budget for 3 months ending 31.3.1998 for a factory producing 5 producers, on the basis of the following information:

Type of Opining Stock		Budgeted sales	Desired closing Stock
Product	(units)	(units)	(units)
A	5,000	20,000	4,000
B	6,000	25,000	6,000
C	10,000	50,000	11,000
D	1,000	10,000	1,000
E	2,000	5,000	5,000

(13) Neolin Ltd. Plans to sell 2,00,000 units of a certain product line in the first fiscal quarter, 2,30,000 units in the second quarter, 2,50,000 units in the third quarter, 2,80,000 units in the fourth quarter and 2,60,000 units in the fifth quarter. At the beginning of the first quarter of the current year, there are 20,000 units of the product in stock. At the end of the quarter, the company plans to have an inventory equal to one-fifth of the sales for the next fiscal quarter. How many units must be manufactured in each quarter of the current year?

(Ans: I Q: 2,26,000; II Q :2,34,000; III Q : 2,56,000; IV Q: 2,76,000)

(14) Prepare a production cost budget for the following:

Units expected to be produced:

April	2,000
May	3,000
June	4,000

Budgeted production cost:

Direct material per unit	Rs.8
Direct wages per unit	Rs.5

Other manufacturing expenses per unit Rs.4

(Ans: A:Rs.34,000; B: Rs.51,000 ; C: Rs. 68,000)

(15) You are required to construct a selling overhead budget from the details given below:

	Rs.
Establishment expenses of sales department	15,000
Other expenses of sales department	6,000
Advertisement	4,500
Salaried to counter salesmen	15,000

**NOTES**

Commission to counter salesmen at 2 % on their sales.

Commission to travelling salesmen at 5% on their sales and out of pocket expense at 3 % on their sales.

The following are the likely sales range for a year.

Sales at counter Rs.	Sales by travelling salesmen Rs.
1,50,000	15,000
2,00,000	20,000
2,50,000	25,000

(Ans: Selling OH: Rs.44,700; Rs.46,000;Rs.47,500)

(16) From the following forecasts of income and expenditure prepare a cash budget for the months January to April 1996:

Month	Sales (credit) Rs.	Purchase (credit) Rs.	Wages Rs.	Manufactu- -ring Exp. Rs.	Administr- ative Exp. Rs.	Selling Exp. RS.
1995	30,000	15,000	3,000	1,150	1,060	500
Nov	35,000	20,000	3,200	1,225	1,040	550
Dec	25,000	15,000	2,500	990	1,100	600
1996	30,000	20,000	3,000	1,050	1,150	620
Jan	35,000	22,500	2,400	1,200	1,220	570
Feb	40,000	25,000	2,600	1,200	1,180	710
Mar						
Apr						

Additional information:

- The customers are allowed a credit period of 2 months
- A dividend of Rs. 10,000 is payable in April
- Capital expenditure to be incurred:
- Plant purchased on 15<sup>th</sup> January for Rs.5,000, a building has been purchased on 1<sup>st</sup> March and the payments are to be made in monthly installments of Rs.2,000 each.
- The creditors are allowing credit of 2 months.
- Wages are paid on the 1<sup>st</sup> of the next month

7. Lag in payment of other expenses is one month
8. Balance of cash in hand on 1<sup>st</sup> January 1996 is Rs.5,000

**(Ans: Closing cash balance: Rs.8, 985; Rs. 18,795;Rs.20,975; Rs.13,685)**

(17) Sivan Ltd., wishes to prepare a cash budget from January. Prepare a cash budget for the first from the following estimated revenue and expenses.

Month	Total sales Rs.	Materials Rs.	Wages Rs.	Overhead	
				Production Rs.	Selling Rs.
January	40,000	40,000	8,000	6,400	1,600
February	44,000	28,000	8,800	6,600	1,800
March	56,000	28,000	9,200	6,800	1,800
April	72,000	44,000	9,200	7,000	2,000
May	60,000	40,000	8,000	6,400	1,800
June	80,000	50,000	10,000	7,200	2,400

Cash balance on 1<sup>st</sup> January was Rs.20,000. A new machine is to be installed at Rs.20,000 on credit to be paid by two equal installments in March and April. Sales commission at 5 % on total sales is to be paid with in a month following actual sales. Rs.20,000 being the amount of share 2<sup>nd</sup> call may be received in march. Share premium amounting to Rs.4,000 is also obtainable with the 2<sup>nd</sup> call.

Period of credit allowed by suppliers	2 months
Period of credit allowed to customers	1 month
Delay in payment of overheads	1 month
Assume cash sales as 50 % of total sales.	½ month

**(Ans: closing cash Balance: J: Rs.36000;  
F: Rs.59, 600; M: Rs.64, 000; A: Rs.69, 400;  
M: Rs.86, 200; J: SR.92, 000)**

## NOTES

**NOTES**

(18) The expense for budgeted production of 10,000 units in a factory are furnished below:

	<b>Rs. per unit</b>
Materials	70
Labour	25
Variable overheads	20
Fixed overheads(Rs.1,00,000)	10
Variable expenses (direct)	5
Selling expenses (10 % Fixed)	13
Distribution expenses (20 % Fixed)	7
Administration expenses (50,000) (fixed for all levels)	5
<b>Total cost per unit(to make and sell)</b>	<b>155</b>

Prepare a flexible budget for the production of a) 8,000 units and b) 6,000 units.

**(Ans: Total cost for 8,000 units: Rs.12,75,400;**

**For 6000units :Rs.10,00,800;**

**For 10,000 units :Rs. 15,50,000)**

(19) The following data are available in a manufacturing co. for a yearly period.

	<b>(Rs. In lakhs)</b>
Fixed expenses:	
Wages and salaries	9.5
Rent, rates & taxes	6.6
Depreciation	7.4
Sundry administration expenses	6.5
Semi-variable expenses (at 50% of capacity)	
Maintenance and repairs	3.5
Indirect labour	7.9
Sales department salaries, etc.	3.8
Sundry administration salary	2.8
Variable expenses (at 50% of capacity)	
Materials	21.7
Labour	20.4
Other expenses	7.9
<b>Total cost</b>	<b>98.00</b>

Assume that the fixed expense remain constant for all levels of production. Semi-variable expenses remain constant between 45 % and 65% of capacity, increasing by 10% between 65% and 80% capacity and by 20% between 80% and 100 % capacity.

Sales at various levels are:	(Rs. In laksh)
50% of capacity	100
60% of capacity	120
75% of capacity	150
90% of capacity	180
100% of capacity	200

Prepare flexible budget for the year and forecast the profit at 50%, 60%, 75%, 90% and 100% of capacity.

**(Ans: Profit: 50%:Rs.2, 00,000; 60%:RS.12, 00,000;**

**75%: Rs.25, 20,000; 90%: Rs.38, 40,000; 100%: Rs.48, 40,000)**

(20) John co.ltd. Produces a product in its factory at the rate of 20 units per standard hour. During March 2007, the budgeted production was 5,000 units. The actual production was 4,500 units. The actual hours worked were 240 hours. Scheduled working days for the month were 30, but the actual numbers of days working were 27. Calculate the various control ratios.

**(Ans: Capacity ratio: 96%; Activity ratio: 90%;**

**Efficiency ratio: 93.75%; calendar ratio: 90%)**

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# NOTES

# NOTES