

LESSON 1 INTRODUCTION TO ACCOUNTING

Contents

1.0 Aims and Objectives

1.1 Introduction

1.2 Book- Keeping

1.2.1 Meaning

1.2.2 Definition

1.2.3 Objectives

1.3 Accounting

1.3.1 Meaning

1.3.2 Definition

1.3.3 Objectives

1.3.4 Importance

1.3.5 Functions

1.3.6 Advantages

1.3.7 Limitations

1.4 Methods of Accounting

1.4.1 Single Entry

1.4.2 Double Entry

1.4.3 Steps involved in double entry system

1.4.4 Advantages of double entry system

1.5 Meaning of Debit and Credit

1.6 Types of Accounts and its rules

1.6.1 Personal Accounts

1.6.2 Real Accounts

1.6.3 Nominal Accounts

1.7 Distinction between Book Keeping and Accounting

1.8 Branches of Accounting

1.8.1 Financial Accounting

1.8.2 Cost Accounting

1.8.3 Management Accounting

1.9 Let us Sum Up

1.10 Lesson-End Activities

1.11 Check your Progress

1.12 Points for Discussion

1.13 References

1.0 AIMS AND OBJECTIVES

- i) To know the Meaning ,Definition and objective of Book- Keeping
- ii) To study the objectives, functions, importance and limitations of Accounting
- iii) To understand the methods of Accounting, kinds of Accounts and Accounting rules.

- iv) To study the difference between Book- keeping and Accounting
- v) To study the various branches of Accounting

1.1 INTRODUCTION

In all activities (whether business activities or non-business activities) and in all organizations (whether business organizations like a manufacturing entity or trading entity or non-business organizations like schools, colleges, hospitals, libraries, clubs, temples, political parties) which require money and other economic resources, accounting is required to account for these resources. In other words, wherever money is involved, accounting is required to account for it. Accounting is often called the language of business. The basic function of any language is to serve as a means of communication. Accounting also serves this function.

1.2. MEANING AND DEFINITION OF BOOK- KEEPING

1.2.1 Meaning

Book- keeping includes recording of journal, posting in ledgers and balancing of accounts. All the records before the preparation of trail balance is the whole subject matter of book- keeping. Thus, book- keeping may be defined as the science and art of recording transactions in money or money's worth so accurately and systematically, in a certain set of books, regularly that the true state of businessman's affairs can be correctly ascertained. Here it is important to note that only those transactions related to business are recorded which can be expressed in terms of money.

1.2.2 Definition

“Book- keeping is the art of recording business transactions in a systematic manner”. A.H.Rosenkamph.

“Book- keeping is the science and art of correctly recording in books of account all those business transactions that result in the transfer of money or money's worth”. R.N.Carter

1.2.3 Objectives of Book- keeping

- i) Book- keeping provides a permanent record of each transactions.
- ii) Soundness of a firm can be assessed from the records of assets and abilities on a particular date.
- iii) Entries related to incomes and expenditures of a concern facilitate to know the profit and loss for a given period.
- iv) It enables to prepare a list of customers and suppliers to ascertain the amount to be received or paid.
- v) It is a method gives opportunities to review the business policies in the light of the past records.
- vi) Amendment of business laws, provision of licenses, assessment of taxes etc., are based on records.

1.3 ACCOUNTING

1.3.1 Meaning of Accounting

Accounting, as an information system is the process of identifying, measuring and communicating the economic information of an organization to its users who need the information for decision making. It identifies transactions and events of a specific entity. A transaction is an exchange in which each participant receives or sacrifices value (e.g. purchase of raw material). An event (whether internal or external) is a happening of consequence to an entity (e.g. use of raw material for production). An entity means an economic unit that performs economic activities.

1.3.2 Definition of Accounting

American Institute of Certified Public Accountants (AICPA) which defines accounting as “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”.

1.3.3 Objective of Accounting

Objective of accounting may differ from business to business depending upon their specific requirements. However, the following are the general objectives of accounting.

i) To keeping systematic record: It is very difficult to remember all the business transactions that take place. Accounting serves this purpose of record keeping by promptly recording all the business transactions in the books of account.

ii) To ascertain the results of the operation: Accounting helps in ascertaining result i.e., profit earned or loss suffered in business during a particular period. For this purpose, a business entity prepares either a Trading and Profit and Loss account or an Income and Expenditure account which shows the profit or loss of the business by matching the items of revenue and expenditure of the some period.

iii) To ascertain the financial position of the business: In addition to profit, a businessman must know his financial position i.e., availability of cash, position of assets and liabilities etc. This helps the businessman to know his financial strength. Financial statements are barometers of health of a business entity.

iv) To portray the liquidity position: Financial reporting should provide information about how an enterprise obtains and spends cash, about its borrowing and repayment of borrowing, about its capital transactions, cash dividends and other distributions of resources by the enterprise to owners and about other factors that may affect an enterprise’s liquidity and solvency.

v) To protect business properties: Accounting provides upto date information about the various assets that the firm possesses and the liabilities the firm owes, so that nobody can claim a payment which is not due to him.

vi) To facilitate rational decision – making: Accounting records and financial statements provide financial information which help the business in making rational decisions about the steps to be taken in respect of various aspects of business.

vii) To satisfy the requirements of law: Entities such as companies, societies, public trusts are compulsorily required to maintain accounts as per the law governing their operations such as the Companies Act, Societies Act, and Public Trust Act etc. Maintenance of accounts is also compulsory under the Sales Tax Act and Income Tax Act.

1.3.4 Importance of Accounting

i) Owners: The owners provide funds or capital for the organization. They possess curiosity in knowing whether the business is being conducted on sound lines or not and whether the capital is being employed properly or not. Owners, being businessmen, always keep an eye on the returns from the investment. Comparing the accounts of various years helps in getting good pieces of information.

ii) Management: The management of the business is greatly interested in knowing the position of the firm. The accounts are the basis, the management can study the merits and demerits of the business activity. Thus, the management is interested in financial accounting to find whether the business carried on is profitable or not. The financial accounting is the “eyes and ears of management and facilitates in drawing future course of action, further expansion etc.”

iii) Creditors: Creditors are the persons who supply goods on credit, or bankers or lenders of money. It is usual that these groups are interested to know the financial soundness before granting credit. The progress and prosperity of the firm, two which credits are extended, are largely watched by creditors from the point of view of security and further credit. Profit and Loss Account and Balance Sheet are nerve centres to know the soundness of the firm.

iv) Employees: Payment of bonus depends upon the size of profit earned by the firm. The more important point is that the workers expect regular income for the bread. The demand for wage rise, bonus, better working conditions etc. depend upon the profitability of the firm and in turn depends upon financial position. For these reasons, this group is interested in accounting.

v) Investors: The prospective investors, who want to invest their money in a firm, of course wish to see the progress and prosperity of the firm, before investing their amount, by going through the financial statements of the firm. This is to safeguard the investment. For this, this group is eager to go through the accounting which enables them to know the safety of investment.

vi) Government: Government keeps a close watch on the firms which yield good amount of profits. The state and central Governments are interested in the financial statements to know the earnings for the purpose of taxation. To compile national accounting is essential.

vii) Consumers: These groups are interested in getting the goods at reduced price. Therefore, they wish to know the establishment of a proper accounting control,

which in turn will reduce to cost of production, in turn less price to be paid by the consumers. Researchers are also interested in accounting for interpretation.

viii) Research Scholars: Accounting information, being a mirror of the financial performance of a business organization, is of immense value to the research scholar who wants to make a study into the financial operations of a particular firm. To make a study into the financial operations of a particular firm, the research scholar needs detailed accounting information relating to purchases, sales, expenses, cost of materials used, current assets, current liabilities, fixed assets, long-term liabilities and share-holders funds which is available in the accounting record maintained by the firm.

Check Your Progress 1

List out five objectives of Accounting.

Notes: (a) Write your answer in the space given below.

(b) Check your answer with the ones given at the end of this Lesson (pp. 13).

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1.3.5 Functions of Accounting

i) Record Keeping Function: The primary function of accounting relates to recording, classification and summary of financial transactions-journalisation, posting, and preparation of final statements. These facilitate to know operating results and financial positions. The purpose of this function is to report regularly to the interested parties by means of financial statements. Thus accounting performs historical function i.e., attention on the past performance of a business; and this facilitates decision making programme for future activities.

ii) Managerial Function: Decision making programme is greatly assisted by accounting. The managerial function and decision making programmes, without accounting, may mislead. The day-to-day operations are compared with some pre-determined standard. The variations of actual operations with pre-determined standards and their analysis is possible only with the help of accounting.

iii) Legal Requirement function: Auditing is compulsory in case of registered firms. Auditing is not possible without accounting. Thus accounting becomes compulsory to comply with legal requirements. Accounting is a base and with its help various returns, documents, statements etc., are prepared.

iv) Language of Business: Accounting is the language of business. Various transactions are communicated through accounting. There are many parties-owners, creditors, government, employees etc., who are interested in knowing the results of the

firm and this can be communicated only through accounting. The accounting shows a real and true position of the firm or the business.

1.3.6 Advantages of Accounting

The following are the advantages of accounting to a business:

- i) It helps in having complete record of business transactions.
- ii) It gives information about the profit or loss made by the business at the close of a year and its financial conditions. The basic function of accounting is to supply meaningful information about the financial activities of the business to the owners and the managers.
- iii) It provides useful information form making economic decisions,
- iv) It facilitates comparative study of current year's profit, sales, expenses etc., with those of the previous years.
- v) It supplies information useful in judging the management's ability to utilise enterprise resources effectively in achieving primary enterprise goals.
- vi) It provides users with factual and interpretive information about transactions and other events which are useful for predicting, comparing and evaluation the enterprise's earning power.
- vii) It helps in complying with certain legal formalities like filing of income-tax and sales-tax returns. If the accounts are properly maintained, the assessment of taxes is greatly facilitated.

1.3.7 Limitations of Accounting

- i) Accounting is historical in nature: It does not reflect the current financial position or worth of a business.
- ii) Transactions of non-monetary nature do not find place in accounting. Accounting is limited to monetary transactions only. It excludes qualitative elements like management, reputation, employee morale, labour strike etc.
- iii) Facts recorded in financial statements are greatly influenced by accounting conventions and personal judgements of the Accountant or Management. Valuation of inventory, provision for doubtful debts and assumption about useful life of an asset may, therefore, differ from one business house to another.
- iv) Accounting principles are not static or unchanging-alternative accounting procedures are often equally acceptable. Therefore, accounting statements do not always present comparable data
- v) Cost concept is found in accounting. Price changes are not considered. Money value is bound to change often from time to time. This is a strong limitation of accounting.

- vi) Accounting statements do not show the impact of inflation.
- vii) The accounting statements do not reflect those increase in net asset values that are not considered realized.

1.4 Methods of Accounting

Business transactions are recorded in two different ways.

1.4.1 Single Entry

1.4.2 Double Entry

1.4.1. Single Entry: It is incomplete system of recording business transactions. The business organization maintains only cash book and personal accounts of debtors and creditors. So the complete recording of transactions cannot be made and trail balance cannot be prepared.

1.4.2 Double Entry: In this system every business transaction is having a two fold effect of benefits giving and benefit receiving aspects. The recording is made on the basis of both these aspects. Double Entry is an accounting system that records the effects of transactions and other events in atleast two accounts with equal debits and credits.

1.4.3 Steps involved in Double entry system

(a) Preparation of Journal: Journal is called the book of original entry. It records the effect of all transactions for the first time. Here the job of recording takes place.

(b) Preparation of Ledger: Ledger is the collection of all accounts used by a business. Here the grouping of accounts is performed. Journal is posted to ledger.

(c) Trial Balance preparation: Summarizing. It is a summary of ledger balances prepared in the form of a list.

(d) Preparation of Final Account: At the end of the accounting period to know the achievements of the organization and its financial state of affairs, the final accounts are prepared.

1.4.4 Advantages of Double Entry System

i) Scientific system: This system is the only scientific system of recording business transactions in a set of accounting records. It helps to attain the objectives of accounting.

ii) Complete record of transactions: This system maintains a complete record of all business transactions.

iii) A check on the accuracy of accounts: By use of this system the accuracy of accounting book can be established through the device called a Trail balance.

iv) Ascertainment of profit or loss: The profit earned or loss suffered during a period can be ascertained together with details by the preparation of Profit and Loss Account.

v) Knowledge of the financial position of the business: The financial position of the firm can be ascertained at the end of each period, through the preparation of balance sheet.

vi) Full details for purposes of control: This system permits accounts to be prepared or kept in as much detail as necessary and, therefore, affords significant information for purposes of control etc.

vii) Comparative study is possible: Results of one year may be compared with those of the previous year and reasons for the change may be ascertained.

viii) Helps management in decision making: The management may be also to obtain good information for its work, specially for making decisions.

ix) No scope for fraud: The firm is saved from frauds and misappropriations since full information about all assets and liabilities will be available.

1.5 Meaning of Debit and Credit

The term 'debit' is supposed to have derived from 'debit' and the term 'credit' from 'creditable'. For convenience 'Dr' is used for debit and 'Cr' is used for credit. Recording of transactions require a thorough understanding of the rules of debit and credit relating to accounts. Both debit and credit may represent either increase or decrease, depending upon the nature of account.

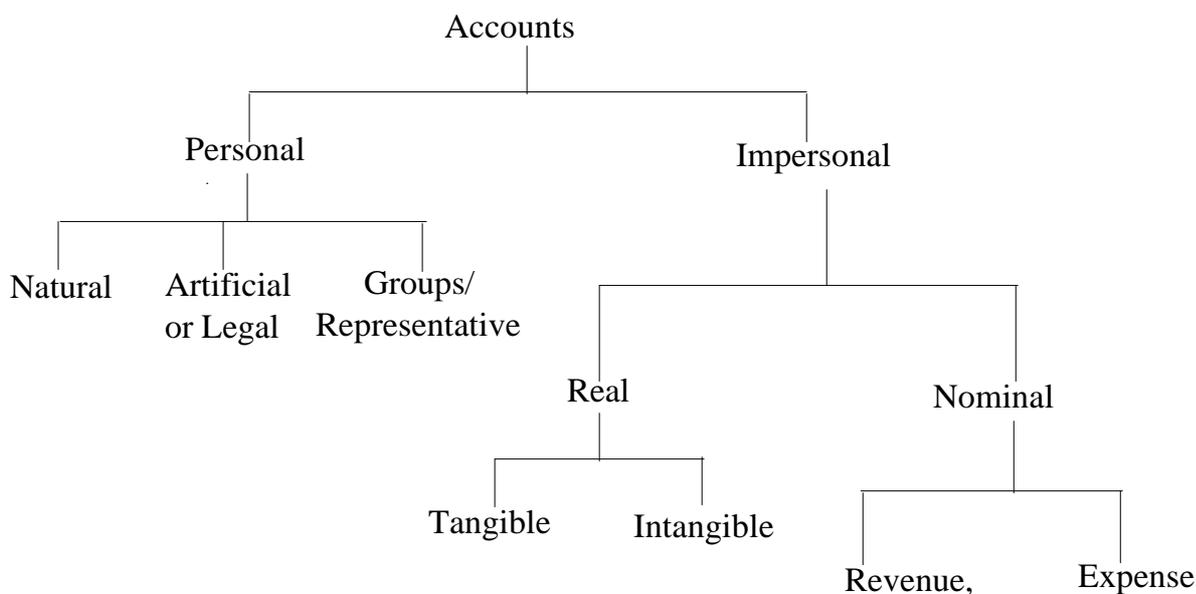
1.6 Types of Accounting

Types of Accounts

The object of book-keeping is to keep a complete record of all the transactions that place in the business. To achieve this object, business transactions have been classified into three categories:

- (i) Transactions relating to persons.
- (ii) Transactions relating to properties and assets
- (iii) Transactions relating to incomes and expenses.

The accounts falling under the first heading are known as 'personal Accounts'. The accounts falling under the second heading are known as 'Real Accounts', The accounts falling under the third heading are called 'Nominal Accounts'. The accounts can also be classified as personal and impersonal. The following chart will show the various types of accounts:



1.6.1 Personal Accounts: Accounts recording transactions with a person or group of persons are known as personal accounts. These accounts are necessary, in particular, to record credit transactions. Personal accounts are of the following types:

(a) **Natural persons:** An account recording transactions with an individual human being is termed as a natural persons' personal account. eg., Kamal's account, Mala's account, Sharma's accounts. Both males and females are included in it

(b) **Artificial or legal persons:** An account recording financial transactions with an artificial person created by law or otherwise is termed as an artificial person, personal account, e.g. Firms' accounts, limited companies' accounts, educational institutions' accounts, Co-operative society account.

(c) **Groups/Representative personal Accounts:** An account indirectly representing a person or persons is known as representative personal account. When accounts are of a similar nature and their number is large, it is better to group them under one head and open a representative personal accounts. e.g., prepaid insurance, outstanding salaries, rent, wages etc.

When a person starts a business, he is known as proprietor. This proprietor is represented by capital account for all that he invests in business and by drawings accounts for all that which he withdraws from business. So, capital accounts and drawings account are also personal accounts.

The rule for personal accounts is: **Debit the receiver**
Credit the giver

1.6.2 Real Accounts

Accounts relating to properties or assets are known as 'Real Accounts', A separate account is maintained for each asset e.g., Cash Machinery, Building, etc., Real accounts can be further classified into tangible and intangible.

(a) **Tangible Real Accounts:** These accounts represent assets and properties which can be seen, touched, felt, measured, purchased and sold. e.g. Machinery account Cash account, Furniture account, stock account etc.

(b) **Intangible Real Accounts:** These accounts represent assets and properties which cannot be seen, touched or felt but they can be measured in terms of money. e.g., Goodwill accounts, patents account, Trademarks account, Copyrights account, etc.

The rule for Real accounts is: **Debit what comes in**
Credit what goes out

1.6.3 Nominal Accounts

Accounts relating to income, revenue, gain expenses and losses are termed as nominal accounts. These accounts are also known as fictitious accounts as they do not represent any tangible asset. A separate account is maintained for each head or

expense or loss and gain or income. Wages account, Rent account Commission account, Interest received account are some examples of nominal account

The rule for Nominal accounts is: **Debit all expenses and losses**

Credit all incomes and gains

1.7 DISTINCTION BETWEEN BOOK-KEEPING AND ACCOUNTING

The difference between book-keeping and accounting can be summarized in a tabular form as under:

Basis of difference	Book-keeping	Accounting
Transactions	Recording of transactions in books of original entry.	To examine these recorded transactions in order to find out their accuracy.
Posting	To make posting in ledger	To examine this posting in order to ascertain its accuracy.
Total and Balance	To make total of the amount in journal and accounts of ledger. To ascertain balance in all the accounts.	To prepare trial balance with the help of balances of ledger accounts.
Income Statement and Balance Sheet	Preparation of trading, Profit & loss account and balance sheet is not book keeping	Preparation of trading, profits and loss account and balance sheet is included in it.
Rectification of errors	These are not included in book-keeping	These are included in accounting.
Special skill and knowledge	It does not require any special skill and knowledge as in advanced countries this work is done by machines.	It requires special skill and knowledge.
Liability	A book-keeper is not liable for accountancy work.	An accountant is liable for the work of book-keeper.

1.8 BRANCHES OF ACCOUNTING

The changing business scenario over the centuries gave rise to specialized branches of accounting which could cater to the changing requirements. The branches of accounting are;

- i) Financial accounting;
- ii) Cost accounting; and
- iii) Management accounting.

Now, let us understand these terms.

1.8.1 Financial Accounting

The accounting system concerned only with the financial state of affairs and financial results of operations is known as Financial Accounting. It is the original form of accounting. It is mainly concerned with the preparation of financial statements for the use of outsiders like creditors, debenture holders, investors and financial institutions. The financial statements i.e., the profit and loss account and the balance sheet, show them the manner in which operations of the business have been conducted during a specified period.

1.8.2 Cost Accounting

In view of the limitations of financial accounting in respect of information relating to the cost of individual products, cost accounting was developed. It is that branch of accounting which is concerned with the accumulation and assignment of historical costs to units of product and department, primarily for the purpose of valuation of stock and measurement of profits. Cost accounting seeks to ascertain the cost of unit produced and sold or the services rendered by the business unit with a view to exercising control over these costs to assess profitability and efficiency of the enterprise. It generally relates to the future and involves an estimation of future costs to be incurred. The process of cost accounting based on the data provided by the financial accounting.

1.8.3 Management Accounting

It is an accounting for the management i.e., accounting which provides necessary information to the management for discharging its functions. According to the Anglo-American Council on productivity, "Management accounting is the presentation of accounting information in such a way as to assist management in the creation of policy and the day-to-day operation of an undertaking." It covers all arrangements and combinations or adjustments of the orthodox information to provide the Chief Executive with the information from which he can control the business e.g. Information about funds, costs, profits etc. Management accounting is not only confined to the area of cost accounting but also covers other areas (such as capital expenditure decisions, capital structure decisions, and dividend decisions) as well.

1.9 Let us Sum Ups

Accounting plays a vital role in the field of commerce and business. One should know the basic purpose of accounting, its merits, kinds of accounting and rules of accounting. By studying this lesson one can understand the above said things and need of double entry system. The next lesson will deal with principles of accounting.

1.10 Lesson-End Activities.

1. Define Accounting.
2. Explain the primary objectives of accounting?
3. What is Double entry system?
4. What is meaning of Debit and Credit?
5. Explain the different methods of accounting.
6. Explain the various types of accounts.
7. Discuss the limitations of accounting.
8. Distinguish between book-keeping and accounting.
9. Explain the accounting rules.

1.11 Check your Progress

1. Your answer may include any five of the following.
 - 1.To keeping systematic record
 - 2.To ascertain the results of the operation
 - 3.To ascertain the financial position of the business
 - 4.To portray the liquidity position
 - 5.To product business properties

1.12 Points for Discussion

1. Explain the accounting rules.
2. Discuss the objectives; functions; importance and limitations of accounting.

1.13 References

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LESSON – 2 PRINCIPLES OF ACCOUNTING

Contents:

2.0 Aims and Objectives

2.1 Introduction

2.2 Accounting concepts and Conventions

2.2.1 Accounting concepts

2.2.2. Accounting Conventions

2.3 Bases of Accounting

2.3.1 Accounting on Cash basis

2.3.2 Accrual Basis of Accounting or Mercantile System

2.3.3 Mixed or Hybrid Basis of Accounting

2.4 Accounting Terminology

2.4.1 Transaction

2.4.2 Debtor

2.4.3 Creditor

2.4.4 Capital

2.4.5 Liability

2.4.6 Asset

2.4.7 Goods

2.4.8 Revenue

2.4.9 Expense

2.4.10 Expenditure

2.4.11 Purchases

2.4.12 Sales

2.4.13 Stock

2.4.14 Drawings

2.4.15 Losses

2.4.16 Account

2.4.17 Invoice

2.4.18 Voucher

2.4.19 Proprietor

2.4.20 Discount

2.4.21 Solvent

2.4.22 Insolvent

2.5 Accounting equation

2.5.1 Rules of Accounting

2.6 Let us Sum Up

2.7 Lesson-End Activities

2.8 Check your Progress

2.9 Points for Discussion

2.10 References

2.0 AIMS AND OBJECTIVES

1. To understand the meaning and definition of Accounting.
2. To study the basic accounting principles.
3. To know the bases of accounting.
4. To understand the accounting terminology and equation.

2.1 INTRODUCTION

The word 'Principle' has been differently viewed by different schools of thought. The American Institute of Certified Public Accountants (AICPA) has viewed the word 'principle' as a general law of rule adopted or professed as a guide to action; a settled ground or basis of conduct of practice"

Accounting principles refer, to certain rules, procedures and conventions which represent a consensus view by those indulging in good accounting practices and procedures. Canadian Institute of Chartered Accountants defined accounting principle as "the body of doctrines commonly associated with the theory and procedure of accounting, serving as an explanation of current practices as a guide for the selection of conventions or procedures where alternatives exist. Rules governing the formation of accounting axioms and the principles derived from them have arisen from common experiences, historical precedent, statements by individuals and professional bodies and regulations of Governmental agencies". To be more reliable, accounting statements are prepared in conformity with these principles. If not, chaotic conditions would result. But in reality as all the businesses are not alike, each one has its own method of accounting. However, to be more acceptable, the accounting principles should satisfy the following three basic qualities, viz., relevance, objectivity and feasibility. The accounting principle is considered to be relevant and useful to the extent that it increases the utility of the records to its readers. It is said to be objective to the extent that it is supported by the facts and free from personal bias. It is considered to be feasible to the extent that it is practicable with the least complication or cost. Though accounting principles are denoted by various terms such as concepts, conventions, doctrines, tenets, assumptions, axioms, postulates, etc., it can be classified into two groups, viz., accounting concepts and accounting conventions.

2.2 ACCOUNTING CONCEPTS AND CONVENTIONS

2.2.1 Accounting concepts:

The term 'concept' is used to denote accounting postulates, i.e., basic assumptions or conditions upon the edifice of which the accounting super-structure is based. The following are the common accounting concepts adopted by many business concerns.

- | | |
|----------------------------|--------------------------------|
| 1. Business Entity Concept | 2. Money Measurement Concept |
| 3. Going Concern Concept | 4. Dual Aspect Concept |
| 5. Periodicity Concept | 6. Historical Cost Concept |
| 7. Matching Concept | 8. Realisation Concept |
| 9. Accrual Concept | 10. Objective Evidence Concept |

i) Business Entity Concept: A business unit is an organization of persons established to accomplish an economic goal. Business entity concept implies that the business unit is separate and distinct from the persons who provide the required capital to it. This concept can be expressed through an accounting equation, viz., $\text{Assets} = \text{Liabilities} + \text{Capital}$. The equation clearly shows that the business itself owns the assets and in turn owes to various claimants. It is worth mentioning here that the business entity concept as applied in accounting for sole trading units is different from the legal concept. The expenses, income, assets and liabilities not related to the sole proprietorship business are excluded from accounting. However, a sole proprietor is personally liable and required to utilize non-business assets or private assets also to settle the business creditors as per law. Thus, in the case of sole proprietorship, business and non-business assets and liabilities are treated alike in the eyes of law. In the case of a partnership, firm, for paying the business liabilities the business assets are used first and if any surplus remains thereafter, it can be used for paying off the private liabilities of each partner. Similarly, the private assets are first used to pay off the private liabilities of partners and if any surplus remains, it is treated as part of the firm's property and is used for paying the firm's liabilities. In the case of a company, its existence does not depend on the life span of any shareholder.

ii) Money Measurement Concept: In accounting all events and transactions are recode in terms of money. Money is considered as a common denominator, by means of which various facts, events and transactions about a business can be expressed in terms of numbers. In other words, facts, events and transactions which cannot be expressed in monetary terms are not recorded in accounting. Hence, the accounting does not give a complete picture of all the transactions of a business unit. This concept does not also take care of the effects of inflation because it assumes a stable value for measuring.

iii) Going Concern Concept: Under this concept, the transactions are recorded assuming that the business will exist for a longer period of time, i.e., a business unit is considered to be a going concern and not a liquidated one. Keeping this in view, the suppliers and other companies enter into business transactions with the business unit. This assumption supports the concept of valuing the assets at historical cost or replacement cost. This concept also supports the treatment of prepaid expenses as assets, although they may be practically unsaleable.

iv) Dual Aspect Concept: According to this basic concept of accounting, every transaction has a two-fold aspect, viz., 1.giving certain benefits and 2. Receiving certain benefits. The basic principle of double entry system is that every debit has a corresponding and equal amount of credit. This is the underlying assumption of this concept. The accounting equation viz., $\text{Assets} = \text{Capital} + \text{Liabilities}$ or $\text{Capital} = \text{Assets} - \text{Liabilities}$, will further clarify this concept, i.e., at any point of time the total assets of the business unit are equal to its total liabilities. Liabilities here relate both to the outsiders and the owners. Liabilities to the owners are considered as capital.

V) Periodicity Concept: Under this concept, the life of the business is segmented into different periods and accordingly the result of each period is ascertained. Though the business is assumed to be continuing in future (as per going

concern concept), the measurement of income and studying the financial position of the business for a shorter and definite period will help in taking corrective steps at the appropriate time. Each segmented period is called “accounting period” and the same is normally a year. The businessman has to analyse and evaluate the results ascertained periodically. At the end of an accounting period, an Income Statement is prepared to ascertain the profit or loss made during that accounting period and Balance Sheet is prepared which depicts the financial position of the business as on the last day of that period. During the course of preparation of these statements capital revenue items are to be necessarily distinguished.

vi) Historical Cost Concept: According to this concept, the transactions are recorded in the books of account with the respective amounts involved. For example, if an asset is purchased, it is entered in the accounting record at the price paid to acquire the same and that cost is considered to be the base for all future accounting. It means that the asset is recorded at cost at the time of purchase but it may be methodically reduced in its value by way of charging depreciation. However, in the light of inflationary conditions, the application of this concept is considered highly irrelevant for judging the financial position of the business.

vii) Matching Concept: The essence of the matching concept lies in the view that all costs which are associated to a particular period should be compared with the revenues associated to the same period to obtain the net income of the business. Under this concept, the accounting period concept is relevant and it is this concept (matching concept) which necessitated the provisions of different adjustments for recording outstanding expenses, prepaid expenses, outstanding incomes, incomes received in advance, etc., during the course of preparing the financial statements at the end of the accounting period.

viii) Realisation Concept: This concept assumes or recognizes revenue when a sale is made. Sale is considered to be complete when the ownership and property are transferred from the seller to the buyer and the consideration is paid in full. However, there are two exceptions to this concept, viz., 1. Hire purchase system where the ownership is transferred to the buyer when the last instalment is paid and 2. Contract accounts, in which the contractor is liable to pay only when the whole contract is completed, the profit is calculated on the basis of work certified each year.

ix) Accrual Concept: According to this concept the revenue is recognized on its realization and not on its actual receipt. Similarly the costs are recognized when they are incurred and not when payment is made. This assumption makes it necessary to give certain adjustments in the preparation of income statement regarding revenues and costs. But under cash accounting system, the revenues and costs are recognized only when they are actually received or paid. Hence, the combination of both cash and accrual system is preferable to get rid of the limitations of each system.

x) Objective Evidence Concept: This concept ensures that all accounting must be based on objective evidence, i.e., every transaction recorded in the books of account must have a verifiable document in support of its existence. Only then, the transactions can be verified by the auditors and declared as true or otherwise. The verifiable evidence for the transactions should be free from the personal bias, i.e., it

should be objective in nature and not subjective. However, in reality the subjectivity cannot be avoided in the aspects like provision for bad and doubtful debts, provision for depreciation, valuation of inventory, etc., and the accountants are required to disclose the regulations followed.

2.2.2 Accounting Conventions

The following conventions are to be followed to have a clear and meaningful information and data in accounting:

i) Consistency: The convention of consistency refers to the state of accounting rules, concepts, principles, practices and conventions being observed and applied constantly, i.e., from one year to another there should not be any change. If consistency is there, the results and performance of one period can be compared easily and meaningfully with the other. It also prevents personal bias as the persons involved have to follow the consistent rules, principles, concepts and conventions. This convention, however, does not completely ignore changes. It admits changes wherever indispensable and adds to the improved and modern techniques of accounting.

ii) Disclosure: The convention of disclosure stresses the importance of providing accurate, full and reliable information and data in the financial statements which is of material interest to the users and readers of such statements. This convention is given due legal emphasis by the Companies Act, 1956 by prescribing formats for the preparation of financial statements. However, the term disclosure does not mean all information that one desires to get should be included in accounting statements. It is enough if sufficient information, which is of material interest to the users, is included.

iii) Conservatism: In the prevailing present day uncertainties, the convention of conservatism has its own importance. This convention follows the policy of caution or playing safe. It takes into account all possible losses but not the possible profits or gains. A view opposed to this convention is that there is the possibility of creation of secret reserves when conservatism is excessively applied, which is directly opposed to the convention of full disclosure. Thus, the convention of conservatism should be applied very cautiously.

2.3 BASES OF ACCOUNTING

There are three bases of accounting in common usage. Any one of the following bases may be used to finalise accounts.

1. Cash basis
2. Accrual or Mercantile basis
3. Mixed or Hybrid basis.

2.3.1 Accounting on 'Cash basis

Under cash basis accounting, entries are recorded only when cash is received or paid. No entry is passed when a payment or receipt becomes due. Income under cash basis of accounting, therefore, represents excess of receipts over payments during an accounting period. Government system of accounting is mostly on cash basis.

Certain professional people record their income on cash basis, but while recording expenses they take into account the outstanding expenses also. In such a case, the financial statements prepared by them for determination of their income is termed as Receipts and Expenditure Account.

2.3.2 Accrual Basis of Accounting or Mercantile System

Under accrual basis of accounting, accounting entries are made on the basis of amounts having become due for payment or receipt. Incomes are credited to the period in which they are earned whether cash is received or not. Similarly, expenses and losses are detailed to the period in which, they are incurred, whether cash is paid or not. The profit or loss of any accounting period is the difference between incomes earned and expenses incurred, irrespective of cash payment or receipt. All outstanding expenses and prepaid expenses, accrued incomes and incomes received in advance are adjusted while finalising the accounts. Under the Companies Act 1956, all companies are required to maintain the books of accounts according to accrual basis of accounting.

2.3.3 Mixed or Hybrid Basis of Accounting

When certain items of revenue or expenditure are recorded in the books of account on cash basis and certain items on mercantile basis, the basis of accounting so employed is called 'hybrid basis of accounting'. For example, a company may follow mercantile system of accounting in respect of its export business. However, government subsidies and duty drawbacks on exports to be received from government are recorded only when they are actually received i.e., on cash basis. Such a method could be adopted because of uncertainty with respect of quantum, amount and time of receipt of such incentives and drawbacks. Such a method of accounting followed by the company is called the hybrid basis of accounting. In practice, the profit or loss shown under this basis will not be realistic. Conservative people who prefer recognising income when received but cautious to provide for all expenses, whether paid or not prefer this system. It is not widely practised due to the inconsistency.

2.4 ACCOUNTING TERMINOLOGY

It is necessary to understand some basic accounting terms which are daily in business world. These terms are called accounting terminology.

2.4.1 Transaction

“An event the recognition of which gives rise to an entry in accounting records. It is an event which results in change in the balance sheet equation. That is, which changes the value of assets and equity. In a simple statement, transaction means the exchange of money or moneys worth from one account to another account Events like purchase and sale of goods, receipt and payment of cash for services or on personal accounts, loss or profit in dealings etc., are the transactions”. Cash transaction is one where cash receipt or payment is involved in the exchange.

Credit transaction, on the other hand, will not have 'cash' either received or paid, for something given or received respectively, but gives rise to debtor and

creditor relationship. Non-cash transaction is one where the question of receipt or payment of cash does not at all arise, e.g. Depreciation, return of goods etc.,

2.4.2 Debtor

A person who owes money to the firm mostly on account of credit sales of goods is called a debtor. For example, when goods are sold to a person on credit that person pays the price in future, he is called a debtor because he owes the amount to the firm.

2.4.3 Creditor

A person to whom money is owing by the firm is called creditor. For example, Madan is a creditor of the firm when goods are purchased on credit from him

2.4.4 Capital

It means the amount (in terms of money or assets having money value) which the proprietor has invested in the firm or can claim from the firm. It is also known as owner's equity or net worth. Owner's equity means owner's claim against the assets. It will always be equal to assets less liabilities, say:

$$\text{Capital} = \text{Assets} - \text{Liabilities.}$$

2.4.5 Liability

It means the amount which the firm owes to outsiders that is, excepting the proprietors. In the words of Finny and Miller, "Liabilities are debts; they are amounts owed to creditors; thus the claims of those who are not owners are called liabilities". In simple terms, debts repayable to outsiders by the business are known as liabilities.

2.4.6 Asset

Any physical thing or right owned that has a money value is an asset. In other words, an asset is that expenditure which results in acquiring of some property or benefits of a lasting nature.

2.4.7 Goods

It is a general term used for the articles in which the business deals; that is, only those articles which are bought for resale for profit are known as Goods.

2.4.8 Revenue

It means the amount which, as a result of operations, is added to the capital. It is defined as the inflow of assets which result in an increase in the owner's equity. It includes all incomes like sales receipts, interest, commission, brokerage etc., However, receipts of capital nature like additional capital, sale of assets etc., are not a part of revenue.

2.4.9 Expense

The terms 'expense' refers to the amount incurred in the process of earning revenue. If the benefit of an expenditure is limited to one year, it is treated as an expense (also known as revenue expenditure) such as payment of salaries and rent.

2.4.10 Expenditure

Expenditure takes place when an asset or service is acquired. The purchase of goods is expenditure, where as cost of goods sold is an expense. Similarly, if an asset is acquired during the year, it is expenditure, if it is consumed during the same year, it is also an expense of the year.

2.4.11 Purchases

Buying of goods by the trader for selling them to his customers is known as purchases. As the trade is buying and selling of commodities purchase is the main function of a trade. Here, the trader gets possession of the goods which are not for own use but for resale. Purchases can be of two types. viz, cash purchases and credit purchases. If cash is paid immediately for the purchase, it is cash purchases, If the payment is postponed, it is credit purchases.

2.4.12 Sales

When the goods purchased are sold out, it is known as sales. Here, the possession and the ownership right over the goods are transferred to the buyer. It is known as. 'Business Turnover' or sales proceeds. It can be of two types, viz., cash sales and credit sales. If the sale is for immediate cash payment, it is cash sales. If payment for sales is postponed, it is credit sales.

2.4.13 Stock

The goods purchased are for selling, if the goods are not sold out fully, a part of the total goods purchased is kept with the trader until it is sold out, it is said to be a stock. If there is stock at the end of the accounting year, it is said to be a closing stock. This closing stock at the year end will be the opening stock for the subsequent year.

2.4.14 Drawings

It is the amount of money or the value of goods which the proprietor takes for his domestic or personal use. It is usually subtracted from capital.

2.4.15 Losses

Loss really means something against which the firm receives no benefit. It represents money given up without any return. It may be noted that expense leads to revenue but losses do not. (e.g.) loss due to fire, theft and damages payable to others,

2.4.16 Account

It is a statement of the various dealings which occur between a customer and the firm. It can also be expressed as a clear and concise record of the transaction relating to a person or a firm or a property (or assets) or a liability or an expense or an income.

2.4.17 Invoice

While making a sale, the seller prepares a statement giving the particulars such as the quantity, price per unit, the total amount payable, any deductions made and shows the net amount payable by the buyer. Such a statement is called an invoice.

2.4.18 Voucher

A voucher is a written document in support of a transaction. It is a proof that a particular transaction has taken place for the value stated in the voucher. Voucher is necessary to audit the accounts.

2.5.19 Proprietor

The person who makes the investment and bears all the risks connected with the business is known as proprietor.

2.4.20 Discount

When customers are allowed any type of deduction in the prices of goods by the businessman that is called discount. When some discount is allowed in prices of goods on the basis of sales of the items, that is termed as trade discount, but when debtors are allowed some discount in prices of the goods for quick payment, that is termed as cash discount.

2.4.21 Solvent

A person who has assets with realizable values which exceeds his liabilities is insolvent.

2.4.22 Insolvent

A person whose liabilities are more than the realizable values of his assets is called an insolvent.

2.5 ACCOUNTING EQUATION

As indicated earlier, every business transaction has two aspects. One aspect is debited other aspect is credited. Both the aspects have to be recorded in accounts appropriately. American Accountants have derived the rules of debit and credit through a 'novel' medium, i.e., accounting equation. The equation is as follows:

$$\text{Assets} = \text{Equities}$$

The equation is based on the principle that accounting deals with property and rights to property and the sum of the properties owned is equal to the sum of the rights to the properties. The properties owned by a business are called assets and the rights to properties are known as liabilities or equities of the business. Equities can be subdivided into equity of the owners which is known as capital and equity of creditors who represent the debts of the business know as liabilities. These equities may also be called internal equity and external equity. Internal equity represents the owner's equity in the assets and external represents he outsider's interest in the asset. Based on the bifurcation of equity, the accounting equation can be restated as follows:

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

(Or)

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

(Or)

$$\text{Liabilities} = \text{Assets} - \text{Capital}.$$

The equation is fundamental in the sense that it gives a foundation to the double entry book-keeping system. This equation holds good for all transaction and events and at all periods of time since every transaction and events has two aspects.

Check your progress 2

What you understand about the following terminology

- (i) Liabilities (ii) Assets (iii) Stock (iv) Losses

List out five objectives of Accounting.

Notes: (a) Write your answer in the space given below.

- (b) Check your answer with the ones given at the end of this Lesson (pp. 25).

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2.5.1 Rules for accounting equation:

Following rules help in making the accounting equation:

- (i) **Assets:** If there is increase in assets, this increase is debited in assets account. If there is decrease in assets, this decrease credited in assets account.
- (ii) **Liabilities:** When liabilities are increase, outsider's equities are credited and when liabilities are decreased, outsider's equities are debited.
- (iii) **Capital:** When capital is increased, it is credited and when capital is withdrawn, it is debited.
- (iv) **Expenses:** Owner's equity is decreased by the amount of revenue expenses.
- (v) **Income or profits:** Owner's equity is increased by the amount of revenue income.

2.6 LET US SUM UP

While recording business transaction, one should know the principals of accounting, concepts and conventions. This chapter elaborately explains the principles which are needed for consistency in accounting throughout the lifetime of the concern. Accounting terminologies needed for preparing accounts that also explained clearly. Next lesion will cover the basic journal and ledger preparation.

2.7 LESSON END ACTIVITIES

1. Discuss the accounting concepts and conventions.
2. What is dual aspect concept?
3. What do your understand by convention of materiality?
4. What is an accounting equation?

2.8 CHECK YOUR PROGRESS

(i) Liability: It means the amount which the firm owes to outsiders that is, excepting the proprietors. In the words of Finny and Miller, “Liabilities are debts; they are amounts owed to creditors; thus the claims of those who are not owners are called liabilities”. In simple terms, debts repayable to outsiders by the business are known as liabilities.

(ii) Asset: Any physical thing or right owned that has a money value is an asset. In other words, an asset is that expenditure which results in acquiring of some property or benefits of a lasting nature.

(iii) Stock: The goods purchased are for selling, if the goods are not sold out fully, a part of the total goods purchased is kept with the trader until it is sold out, it is said to be a stock. If there is stock at the end of the accounting year, it is said to be a closing stock. This closing stock at the year end will be the opening stock for the subsequent year.

(iv) Losses: Loss really means something against which the firm receives no benefit. It represents money given up without any return. It may be noted that expense leads to revenue but losses do not. (e.g.) loss due to fire, theft and damages payable to others.

2.9 POINTS FOR DISCUSSION

1. Explain the following terms
 - a) Assets
 - b) Liabilities
 - c) Capital
 - d) Revenue
 - e) Expenses
2. Explain the various types of accounting conventions.

2.10 REFERENCES

1. Gneval, T.B. Double Entry Book Keeping.
2. Jain & Navang – Advanced Accountancy.

LESSON 3 JOURNAL AND LEDGER

Contents:

- 3.0 Aims and objectives**
- 3.1 Introductions**
- 3.2 Advantages of Journal**
- 3.3 Sub division of journal**
- 3.4 Ledger**
 - 3.4.1 Ruling of ledger account
 - 3.4.2 Sub-division of ledger
 - 3.4.3 Distinction between journal and ledger
- 3.5 Illustrations**
- 3.6 Let us Sum Up**
- 3.7 Lesson-End Activities**
- 3.8 Check Your Progress**
- 3.9 Points for Discussion**
- 3.10 References**

3.0 AIMS AND OBJECTIVES

- (i) To understand the meaning of journal and ledger.
- (ii) To study the advantages and important point of journal.
- (iii) To know the rules and sub-division of ledger.
- (iv) To study the distinguish between journal and ledger.

3.1 INTRODUCTIONS

When the business transactions take place, the first step is to record the same in the books of original entry or subsidiary books or books of prime or journal. Thus journal is a simple book of accounts in which all the business transactions are originally recorded in chronological order and from which they are posted to the ledger accounts at any convenient time. Journalising refers to the act of recording each transaction in the journal and the form in which it is recorded, is known as a journal entry.

3.2 ADVANTAGES OF JOURNAL

The following are the inherent advantages of using journal, though the transactions can also be directly recorded in the respective ledger accounts;

1. As all the transactions are entered in the journal chronologically, a date wise record can easily be maintained;
2. All the necessary information and the required explanations regarding all transactions can be obtained from the journal; and

3. Errors can be easily located and prevented by the use of journal or book of prime entry.

The specimen journal is as follows:

Date	Particulars		L.F.	Debit Rs.	Credit Rs.
1	2		3	4	5
				-	-

The journal has five columns, viz. (1) Date; (2) Particulars; (3) Ledger Folio; (4) Amount (Debit); and (5) Amount (Credit) and a brief explanation of the transaction by way of narration is given after passing the journal entry.

(1) Date: In each page of the journal at the top of the date column, the year is written and in the next line, month and date of the first entry are written. The year and month need not be repeated until a new page is begun or the month or the year changes. Thus, in this column, the date on which the transaction takes place is alone written.

(2) Particulars: In this column, the details regarding account titles and description are recorded. The name of the account to be debited is entered first at the extreme left of the particulars column next to the date and the abbreviation 'Dr.' is written at the right extreme of the same column in the same line. The name of the account to be credited is entered in the next line preceded by the word "To" leaving a few spaces away from the extreme left of the particulars column. In the next line immediately to the account credited, a short about the transaction is given which is known as "Narration". "Narration" may include particulars required to identify and understand the transaction and should be adequate enough to explain the transaction. It usually starts with the word "Being" which means what it is and is written within parentheses. The use of the word "Being" is completely dispense with, in modern parlance. To indicate the completion of the entry for a transaction, a line is usually drawn all through the particulars column.

(3) Ledger Folio: This column is meant to record the reference of the main book, i.e., ledger and is not filled in when the transactions are recorded in the journal. The page number of the ledger in which the accounts are appearing is indicated in this column, while the debits and credits are posted o the ledger accounts.

(4) Amount (Debit): The amount to be debited along with its unit of measurement at the top of this column on each page is written against the account debited.

(5) Amount (Credit): The amount to be credited along with its unit of measurement at the top of this column on each page is written against the account credited.

3.3 SUB-DIVISION OF JOURNAL

When innumerable number of transactions takes place, the journal, as the sole book of the original entry becomes inadequate. Thus, the number and the number and type of journals required are determined by the nature of operations and the volume of transactions in a particular business. There are many types of journals and the following are the important ones:

1. Sales Day Book- to record all credit sales.
2. Purchases Day Book- to record all credit purchases.
3. Cash Book- to record all cash transactions of receipts as well as payments.
4. Sales Returns Day Book- to record the return of goods sold to customers on credit.
5. Purchases Returns Day Book- to record the return of goods purchased from suppliers on credit.
6. Bills Receivable Book- to record the details of all the bills received.
7. Bills Payable Book- to record the details of all the bills accepted.
8. Journal Proper- to record all residual transactions which do not find place in any of the aforementioned books of original entry.

3.4 LEDGER

Ledger is a main book of account in which various accounts of personal, real and nominal nature, are opened and maintained. In journal, as all the business transactions are recorded chronologically, it is very difficult to obtain all the transactions pertaining to one head of account together at one place. But, the preparation of different ledger accounts helps to get a consolidated picture of the transactions pertaining to one ledger account at a time. Thus, a ledger account may be defined as a summary statement of all the transactions relating to a person, asset, expense, or income or gain or loss which have taken place during a specified period and shows their net effect ultimately. From the above definition, it is clear that when transactions take place, they are first entered in the journal and subsequently posted to the concerned accounts in the ledger. Posting refers to the process of entering in the ledger the information given in the journal. In the past, the ledgers were kept in bound books. But with the passage of time, they became loose-leaf ones and the advantages of the same lie in the removal of completed accounts, insertion of new accounts and arrangement of accounts in any required manner.

3.4.1 Ruling of ledger account

The ruling of a ledger account is as follows:

Type- 1

Dr.				Cr.			
Date	Particulars	J.F.	Rs.	Date	Particulars	J.F.	Rs.
	To name of the account to be credited				By name of the account to be debited		

Type- 2

Date	Particulars	J.F.	Dr. Rs.	Cr. Rs.	Dr. / Cr.	Balance Rs.
	To name of the account to be credited				By name of the account to be debited	

Ledger Account Type 1 is followed in almost all the business concerns, whereas Type 2 is followed only in banking institutions to save space, time and clerical work involved.

3.4.2 Sub-division of ledger

In a big business, the number of accounts is numerous and it is found necessary to maintain a separate ledger for customers, suppliers and for others. Usually, the following three types of ledgers are maintained in such big business concerns.

(i) Debtors' Ledger: It contains accounts of all customers to whom goods have been sold on credit. From the Sales Day Book, Sales Returns Book and Cash Book, the entries are made in this ledger. This ledger is also known as sales ledger.

(ii) Creditors' Ledger: It contains accounts of all suppliers from whom goods have been bought on credit. From the Purchases Day Book, Purchases Returns Book and Cash Book, the entries are made in this ledger. This ledger is also known as Purchase Ledger.

(iii) General Ledger: It contains all the residual accounts of real and nominal nature. It is also known as Nominal Ledger.

3.4.3 Distinction between journal and ledger

- (i) Journal is a book of prime entry, whereas ledger is a book of final entry.
- (ii) Transactions are recorded daily in the journal, whereas posting in the ledger is made periodically.
- (iii) In the journal, information about a particular account is not found at one place, whereas in the ledger information about a particular account is found at one place only.
- (iv) Recording of transactions in the journal is called journalising and recording of transactions in the ledger is called posting.
- (v) A journal entry shows both the aspects debit as well as credit but each entry in the ledger shows only one aspect.
- (vi) Narration is written after each entry in the journal but no narration is given in the ledger.
- (vii) Vouchers, receipts, debit notes, credit notes etc., from the basic documents form journal entry, whereas journal constitutes basic record for ledger entries.

3.5. ILLUSTRATIONS

1. Journalise the following transactions in the books of Shankar & Co.

1998			Rs.
June	1	Started business with a capital of	60,000
June	2	Paid into bank	30,000

June 4	Purchased goods from Kamal on credit	10,000
June 6	Paid to Shiram	4,920
June 6	Discount allowed by him	80
June 8	Cash Sales	20,000
June 12	Sold to Hameed	5,000
June 15	Purchased goods from Bharat on credit	7,500
June 18	Paid Salaries	4,000
June 20	Received from Prem	2,480
June 20	Allowed him discount	20
June 25	Withdrew from bank for office use	5,000
June 28	Withdraw for personal use	1,000
June 30	Paid Hanif by cheque	3,000

Solution:**In the books of Shankar & Co.**

Date		Particulars	L.F.	Dr. Rs.	Cr. Rs.
1998 June	1	Cash A/c To Capital A/c (Capital brought into the business)	Dr.	60,000	60,000
June	2	Bank A/c To Capital A/c (Cash paid into bank)		30,000	30,000
June	4	Purchases A/c To Kamal's A/c (Purchased goods from Kamal on credit)		10,000	10,000
June	6	Shriram's A/c To Cash A/c (Cash paid to Shriram)	Dr.	4,920	4,920
June	6	Shriram's A/c To Cash A/c (Cash allowed by Shriram)	Dr.	80	80
June	8	Cash A/c To Sales A/c (Cash sales effected)	Dr.	20,000	20,000
June	12	Hameed's A/c To Sales A/c (Goods sold to Hameed)	Dr.	5,000	5,000
June	15	Purchases A/c To Bharat's A/c (Purchased goods from Bharat)	Dr.	7,500	7,500
June	18	Salaries A/c To Cash A/c (salaries paid)	Dr.	4,000	4,000
June	20	Cash A/c	Dr.	2,480	

		To Prem's A/c (Cash received from Prem)			2,480
June	20	Discount A/c To Prem's A/c (Discount allowed to Prem)	Dr.	20	20
June	25	Cash A/c To Bank A/c (Cash withdrawn from bank)	Dr.	5,000	5,000
June	28	Drawings A/c To Cash A/c (Cash withdrawn from bank for personal use)	Dr.	1,000	1,000
June	30	Hanif's A/c To Bank A/c (Paid to Hanif by cheques)	Dr.	3,000	3,000

Illustration-2

Journalise the following transactions:

1998

June 1 Purchased goods worth Rs.300 from Vimal and Rs.500 from Kamal on credit.

June 3 Sale of goods worth Rs.1,000 to Balram and Rs.700 to Dhanram.

June 5 Cash of Rs.900 received from Ramasamy and Rs.800 from Krishnasmy.

June 7 Paid Rs.800 to Pradeep and Rs.500 to kuldeep.

June 9 Withdrawn from bank Rs.600 for office use and Rs.300 for personal use.

Solution:

Journal

Date		Particulars	L.F.	Dr. Rs.	Cr. Rs.
1998 June	1	Purchases A/c To Vimal's A/c To Kamal's A/c (Purchased goods from Vimal and Kamal on credit)	Dr.	800	300 500
June	3	Balram's A/c Dhanram A/c To Sales A/c (Sales of goods to Balram and Dhanram)	Dr. Dr.	1,000 700	1,700
June	5	Cash A/c To Ramasamy's A/c To Krishnasamy's A/c (Cash received from Ramasamy and Krishnasamy)	Dr.	1,700	900 800
June	7	Pradeep's A/c Kuldeep's A/c To Cash A/c (Paid Pradeep and Kuldeep)	Dr. Dr.	800 500	1,300
June	9	Cash A/c Drawings A/c To Bank A/c	Dr. Dr.	600 300	900

	(Withdrawn from bank for office use and personal use)			
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Check your progress - 3

List out any three different between Journal and Ledger

Notes: (a) Write your answer in the space given below.

(b) Check your answer with the ones given at the end of this Lesson (pp. 39).

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Illustration - 3

Journalise the following transactions, post the same in relevant ledger account and balance the same.

- 1998
- June 1 Karthik commenced business with Rs.20,000.
 - June 2 Paid into bank Rs.5,000.
 - June 3 Purchased Plant worth Rs.10,000 from Modi & Co.
 - June 4 Purchased goods worth Rs. 5,000 form Anwar.
 - June 6 Goods worth Rs.4,000 sold to Anbu
 - June 8 Sold goods worth Rs.2,000 for cash.
 - June 10 Goods returned by Anbu Rs.50.
 - June 15 Paid rent Rs.250.
 - June 18 Withdrawn from bank for office use Rs. 2,500.
 - June 20 Paid Salaries Rs.1,800.
 - June 25 Withdrawn for personal use Rs.250.
 - June 26 Goods returned to Anwar Rs.100.
 - June 27 Paid for office furniture Rs.1,500 by cheque.
 - June 28 Received Rs.3,900 cash from Anbu and discount allowed Rs.50.
 - June 29 Paid Anwar on account Rs.4,800 and discount allowed by him Rs.100.

Date	Particular	L.F.	Dr. Rs.	Cr. Rs.
1998 June 1	Cash A/c To Karthik's Capital A/c (Capital brought into the business by Karthik)	Dr	20,000	20,000
June 2	Bank A/c To Cash A/c (Cash Paid in to bank)	Dr	5,000	5,000

June 3	Plant A/c To Modi & Co's. A/c (Plant purchased from Modi & Co.)	Dr	10,000	10,000
June 4	Purchase A/c To Anwar's A/c (Goods purchased from Anwar)	Dr	5,000	5,000
June 6	Anbu's A/c To Sales A/c (Goods sold to Anbu)	Dr	4,000	4,000
June 8	Cash A/c To Sales A/c (Goods sold for cash)	Dr	2,000	2,000
June 10	Sales Returns A/c To Anbu's A/c (Goods returned by Anbu)	Dr	50	50
June 15	Rent A/c To Cash A/c (Rent paid)	Dr	250	250
June 18	Cash A/c To Bank A/c (Withdrawn from bank for office use)	Dr	2,500	2,500
June 20	Salaries A/c To Cash A/c (Salaries paid)	Dr	1,800	1,800
June 25	Drawing A/c To Cash A/c (Withdrawn for personal use)	Dr	250	250
June 26	Anwar's A/c To Purchases Returns A/c (Goods returned to Anwar)	Dr	100	100
June 27	Furniture A/c To Bank A/c (Payment by cheque for office furniture)	Dr	1,500	1,500
June 28	Cash A/c Discount A/c To Anbu's A/c (Cash received from Anbu and discount allowed Rs.50)	Dr Dr	3,900 50	3,950
June 29	Anwar's A/c To Cash A/c To Discount A/c (Cash paid to Anwar and discount allowed by him)	Dr	4,900	4,800 100

**Ledger
Cash A/c**

Dr.					Cr.		
Date	Particulars	J.F.	Rs.	Date	Particulars	J.F.	Rs.
1998				1998			

June 1	To Karthik's Capital A/c	20,000	June 2	By Bank A/c	5,000
June 8	To Sales A/c	2,000.	June 15	By Rent A/c	250
June 18	To Bank A/ c	2,500	June 20	By Salaries A/c	1,800

June 28	To Anbu's A/c	3,900	June 25	By Drawings A/c	250
			June 29	By Anwar's A/c	4,800
			June 30	By Balance c/d	16,300
		28,400			28,400
July 1	To Balance b/d	16,300			

Bank

Dr.				Cr.			
Date	Particulars	J.F.	Rs.	Date	Particulars	J.F.	Rs.
1998 June 2	To Cash A/c		5,000	1998 June 18	By Cash A/c		2,500
				June 27	By Furniture A/c		1,500
				June 30	By Balance c/d		1,000
			5,000				5,000
July 1	To Balance b/d		1,000				

Karthik's Capital A/c

Dr.				Cr.			
Date	Particulars	J.F.	Rs.	Date	Particulars	J.F.	Rs.
1998 June 30	To Balance c/d		20,000	1998 June 1	By Cash A/c		20,000
			20,000				20,000
				July 1	By Balance b/d		20,000

Plant A/c

Dr.				Cr.			
Date	Particulars	J.F.	Rs.	Date	Particulars	J.F.	Rs.
1998 June 3	To Modi & Co's. A/c		10,000	1998 June 30	By Balance c/d		10,000
			10,000				10,000
July 1	To Balance c/d		10,000				

Modi & Co's. A/c

Dr.				Cr.			
Date	Particulars	J.F.	Rs.	Date	Particulars	J.F.	Rs.
1998 June 30	To Balance c/d		10,000	1998 June 3	By Plant A/c		10,000
			10,000				10,000
				July 1	By Balance b/d		10,000

Purchase A/c

Dr.				Cr.			
Date	Particulars	J.F.	Rs.	Date	Particulars	J.F.	Rs.
1998				1998			

June	4	To Anwar's A/c	5,000	June	30	By Balance C/d	5,000
			5,000				5,000
July	1	To Balance b/d	5,000				

Anwar's A/c

Dr.				Cr.				
Date		Particulars	J.F.	Rs.	Date	Particulars	J.F.	Rs.
1998					1998			
June	26	To Purchases Returns A/c		100	June	4	By Purchases A/c	5,000
June	29	To Cash A/c		4,800				
June	29	To Discount A/c		100				
				5,000				5,000

Sales A/c

Dr.				Cr.				
Date		Particulars	J.F.	Rs.	Date	Particulars	J.F.	Rs.
1998					1998			
June	30	To Balance c/d		6,000	June	6	By Anbu's A/c	4,000
				6,000	June	8	By Cash A/c	2,000
								6,000
					July	1	To Balance b/d	6,000

Anbu's A/c

Dr.				Cr.				
Date		Particulars	J.F.	Rs.	Date	Particulars	J.F.	Rs.
1998					1998			
June	6	To Sales A/c		4,000	June	10	By Sales Returns A/c	50
					June	28	By Cash A/c	3,900
					June	28	By Discount A/c	50
				4,000				4,000

Purchases Returns A/c

Dr.				Cr.				
Date		Particulars	J.F.	Rs.	Date	Particulars	J.F.	Rs.
1998					1998			
June	30	To Balance c/d		100	June	26	By Anwar's A/c	100
				100				100
					July	1	By Balance b/d	100

Sales Returns A/c

Dr.				Cr.				
Date		Particulars	J.F.	Rs.	Date	Particulars	J.F.	Rs.
1998					1998			
June	10	To Anbu's A/c		50	June	30	By Balance c/d	50
				50				50
July	1	To Balance b/d		50				

Furniture A/c

Dr.				Cr.				
Date		Particulars	J.F.	Rs.	Date	Particulars	J.F.	Rs.
1998					1998			

June	27	To Bank A/c		1,500	June	30	By Balance c/d		1,500
				1,500					1,500
July	1	To Balance b/d		1,500					

Discount A/c

Dr.				Cr.					
Date		Particulars	J.F.	Rs.	Date		Particulars	J.F.	Rs.
1998					1998				
June	28	To Anbu's A/c		50	June	29	By Anwar's A/c		100
June	30	To Balance c/d		50					10,000
				100	July	1	By Balance b/d		100
									50

Drawings A/c

Dr.				Cr.					
Date		Particulars	J.F.	Rs.	Date		Particulars	J.F.	Rs.
1998					1998				
June	25	To Cash A/c		250	June	30	By Balance c/d		250
				250					250
July	1	To Balance b/d		250					

Rent A/c

Dr.				Cr.					
Date		Particulars	J.F.	Rs.	Date		Particulars	J.F.	Rs.
1998					1998				
June	15	To Cash A/c		250	June	30	By Balance c/d		250
				250					250
July	1	To Balance b/d		250					

Salaries A/c

Dr.				Cr.					
Date		Particulars	J.F.	Rs.	Date		Particulars	J.F.	Rs.
1998					1998				
June	20	To Cash A/c		1,800	June	30	By Balance c/d		1,800
				1,800					1,800
July	1	To Balance b/d		1,800					1,800

3.6. LET US SUM UP

Business transactions are first entered in the records in the form of journal. As per the double entry system of accounting we have to classify the accounts and apply the double accounting rule accordingly. Then in order to summaries the accounts, posting should be done through ledger.

3.7 Lesson-End Activities

1. What is journal?
2. What is ledger?
3. Distinguish between journal and ledger?
4. What are the advantages of journal?
5. Journalize the following transactions

2000

- Jan. 1. Mohan started business with Rs.25,000
2. Bought goods from B Rs.20,000
3. Paid into bank Rs.10,000
4. Returned goods to B Rs.1000
5. Sold goods to R Rs.2500
6. Paid cartage Rs.20
7. Received dividend on investment Rs.100
8. Paid salary Rs.250

3.8 Check your progress answer

Your answer may include any five following

- (i) Journal is a book of prime entry, whereas ledger is a book of final entry.
- (ii) Transactions are recorded daily in the journal, whereas posting in the ledger is made periodically.
- (iii) In the journal, information about a particular account is not found at one place, whereas in the ledger information about a particular account is found at one place only.
- (iv) Recording of transactions in the journal is called journalising and recording of transactions in the ledger is called posting.
- (v) A journal entry shows both the aspects debit as well as credit but each entry in the ledger shows only one aspect.

3.9 Points for Discussion

1. Journalize the following transactions in the books of Mr.Chandran:

2001

- Apr. 1 Started business with cash Rs.40,000 and furniture Rs.10,000.
5 Paid tuition fee of the son Rs.1,000
8 Paid household expenses Rs.1,400.
10 Sold personal car for Rs.18,000 and the amount is brought into the business.
15 Withdrew goods for personal use Rs.2,000.
16 Sold goods to Navin on credit Rs.8,000.
18 Sold old typewriter Rs.1,000.
19 Purchase goods on credit from Ramesh Rs.20,000
20 Received interest on investment Rs.6,000.
22 Received commission from Manohar Rs.2,000.
23 Receive a cheque from Navin Rs.5,000.
25 Issued a cheque to Ramesh Rs.12,000
26 Received cash from Anand on account Rs.4,000
27 Paid cash to Bhagwan on account Rs.1,000.
28 Returned goods to Ramesh Rs.1,000.

- 29 Navin returned goods Rs.500.
 30 Paid rent Rs.1,000.
 Paid salaries Rs.12,000.

2. Journalise the following transactions in the books of Sabitha and post them in the Ledger:

2000

Apr.	1	Bought goods for cash	Rs.	15,000
	3	Sold goods for cash	Rs.	19,000
	5	Bought goods on credit from Perara	Rs.	12,000
	6	Sold goods on credit to Ravindar	Rs.	16,000
	8	Received from Ravindar	Rs.	12,000
	10	Paid to Perara	Rs.	7,500
	25	Bought furniture for cash	Rs.	4,500

3. Enter the following transactions in the journal and ledger of Murali of New Delhi:

2001

			Rs.
Mar.	1	Murali commenced business with cash	90,000
	4	Purchased goods for cash	6,000
	5	Deposited into bank	40,000
	6	Withdrew from bank for office use	4,500
	8	Sold goods to Raja	4,800
	12	Purchased goods on credit from Kathar	1,380
	15	Received from Raj Rs.4,650 and allowed him discount	150
	20	Cash sales	7,200
	28	Paid to Kathar in full settlement	1,300
	30	Paid rent	300
		Paid salary	1,600

Accounts are closed on 31st March 2001.

4. Journalise the following transactions and Post them in relevant ledger accounts:

1991

			Rs.
Jan.	1.	Bought from Das	1,000
Jan.	2.	Sold to Sen	400
Jan.	3.	Sold to Ramesh	250
Jan.	4.	Purchased from Suresh	200
Jan.	5.	Sales returns by Sen	50
Jan.	10.	Bought from Shyam	600
Jan.	12.	Returned to Suresh	100
Jan.	15.	Sold to Roy	800
Jan.	16.	Roy returned goods	200
Jan.	17.	Sold goods to Ram	300
Jan.	19.	Bough from Naresh	650
Jan.	21.	Sold to Bhatanger	750
Jan.	22.	Returned to Naresh	50
Jan.	25.	Bought from Khatju	850

Jan.	27.	Sold to Dheeran	260
Jan.	29.	Returns from Bhatanger	100
Jan.	30.	Dheeran Returned	60
Jan.	31.	Returns to Khatju	150

3.10 References

- 1) Grewal, T.B., Double Entry Book Keeping.
- 2) Gupta & Radhasway – Advanced Accountancy.

LESSON 4 SUBSIDIARY BOOKS

Contents:

4.0 Aims and Objectives

4.1 Introduction

4.2 Kinds of subsidiary books

- 4.2.1 Purchases Books
- 4.2.2 Sales Books
- 4.2.3 Purchases Returns Books
- 4.2.4 Sales Returns Books
- 4.2.5 Bills Receivable Books
- 4.2.6 Bills payable Book
- 4.2.7 Journal proper
- 4.2.8 Cash book

4.3 Basic Document for subsidiary Books

- 4.3.1 Inward Invoice
- 4.3.2 Outward Invoice
- 4.3.3 Debit Note
- 4.3.4 Credit Note
- 4.3.5 Cash Receipts and Vouchers

4.4 Advantage of subsidiary

- 4.4.1 Division of work
- 4.4.2 Facilitate posting
- 4.4.3 Time Saving
- 4.4.4 Minimum frauds and errors
- 4.4.5 Better information
- 4.4.6 Management decisions facilitated
- 4.4.7 Specialisation and efficiency

4.5 Imprest system

4.6 Discounts

- 4.6.1 Trade discount
- 4.6.2 Cash discount
- 4.6.3 Difference between Trade discount and Cash discount

4.7 Illustrations

4.8 Let us Sum Up

4.9 Lesson-End Activities

4.10 Check your Progress

4.11 Points for Discussion

4.12 References

4.0 AIMS AND OBJECTIVES

- i. To know the Meaning of subsidiary books,
- ii. To understand the kinds of subsidiary books

- iii. To know the meaning of Trade and Cash discount and also to understand the difference between these two discounts.

4.1 INTRODUCTION

Journal is subdivided into various parts known as subsidiary books or subdivisions of journal. Each one of the subsidiary books is a special journal and a book of original or prime entry. There are no journal entries when records are made in these books. Recording the transactions in a special journal and then in the ledger accounts is the practical system of accounting which is also referred to as English System. Though the usual type of journal entries are not passed in these sub-divided journals, the double entry principles of accounting are strictly followed.

4.2 KINDS OF SUBSIDIARY BOOKS

There are different types of subsidiary books which are commonly used in any big business concern. They are:

4.2.1 Purchases Book	4.2.2 Sales Book
4.2.3 Purchases Returns Books	4.2.4 Sales Returns Books
4.2.5 Bills Receivable Books	4.2.6 Bills Payable Books
4.2.7 Journal Proper	4.2.8 Cash Book

4.2.1 Purchases Book

This book is used to record all credit purchases made by the business concern from its suppliers. This book is also known as 'Purchases Books', 'Purchases Journal' or 'Invoice Book'. It contains five columns, viz., Date, Particulars, Ledger Folio, Inward Invoice Number and Amount. Whenever any credit purchase is made, the date on which the transaction has taken place is entered in the 'Date Column', the name of the party from whom the purchase has been made the particulars column, the inward invoice number with which the purchase has been made in the 'inward Invoice Number Column' and the money value of the purchase in the 'Amount Column'. The 'L.F. Column' is to record the ledger folio number while posting is made.

Posting: The total of purchases book for a specified period is debited to the purchases account in the Ledger. The personal accounts are posted by crediting the individual accounts.

Purchases Book

Date	Particulars	L.F.	Inward Invoice Number	Amount Rs.

4.2.2 Sales books

This book is used to record all credit sales effected by the business to its customers. This book is also called as 'Sales Book', 'sales Journal' or 'Sold Book'. It contains five columns, viz., Date, Particulars, L.F., Outward Invoice Number and Amount. When any credit sales is effected, the date is entered in the 'Date Column', the name of the party to whom the sale is made in the 'Particulars Column', the

invoice number with which the sales have been effected in the 'Out-ward Invoice Number Column' and the money value of the sales in the 'Amount Column', The LF column is entered while posting is effected.

Posting: The total of the Sales Book for a specified period is credited to the Sales Account in the Ledger. The personal account is posted by debiting the individual accounts.

The specimen ruling of a Sales Book is as follows:

Sales Book

Date	Particulars	L.F.	Outward Invoice Number	Amount Rs.

4.2.3 Purchases Returns Books

This book is used to record all transactions relating to the goods returned to suppliers. This book is also known as 'Purchases Returns journal' or 'Returns Outward Book', the specimen ruling of a Purchases Returns Book is given below:

Purchases Returns Book

Date	Name of supplier	L.F.	Debit Note	Amount Rs.

The columns in this book are similar to those of Purchases Book except the Debit Note Column in which the debit note number is recorded. A debit note represents a note sent to the supplier for the value of goods returned by the business. While posting, all the personal accounts are debited in the Ledger and the total of Purchases Returns Book is credited to Purchases Returns Account.

4.2.4 Sales Returns Books

This book is used to record all transactions relating to goods returned by customers. This book is also known as 'Sales Return Journal' or 'Returns Inwards Book', the specimen ruling of sales returns book is given below:

Sales Returns Book

Date	Name of Customer	L.F.	Credit Note	Amount Rs.

The columns in this book are similar to those of Sales Book except the Credit Note Column in which the credit note number is recorded. A credit note represents a note sent to the customer for the value of the goods returned by him. While posting, all the personal accounts are credited in the Ledger and the total of sales returns book is debited to Sales Returns Account

4.2.5 Bills Receivable Book:

This book is used to record all the bills received by the business from its customers. It contains details regarding the name of the acceptor, date of the bill,

place of payment, term of the bill, due date and the amount of the bill. The specimen ruling of a Bills Receivable Book is given below:

Bills Receivable Book

Sl. No.	Date of Receipt	L.F.	Drawer	Acceptor	Term	Due Date	Rs.	Remarks

While posting, the individual customers' accounts will be credited and the total of the Bills Receivable Book for a specified period will be debited to the Bills Receivable Account in the Ledger.

4.2.6 Bills Payable Book:

This book is used to record all the bills accepted by the business drawn by its creditors. It contains details regarding the name of the drawer, payee and date of acceptance, due date, place of payment, term and amount of the bill.

The specimen ruling of Bills payable Book is given below:

Bills Payable Book

Sl. No.	Date of Acceptance	Drawer	Payee	L.F.	Where Payable	Date of bill	Term	Due Date	Rs.	Remarks

While posting the individual drawer or payee account is debited and the Bills payable Account is credited with the total in the Bills Payable Book.

4.2.7. Journal Proper

This book is used to record all the residual transactions which cannot find place in any of the subsidiary books. While recording, the entries are made in the journal covering both the aspects of the transaction. The following are some of the examples of transactions which are entered in this book.

1. Opening entries and closing entries.
2. Adjusting entries
3. Transfer entries from one account to another account.
4. Rectification entries.
5. Bills of Exchange Entries
6. Credit Purchase/sale of an asset other than goods.

4.2.8 Cash Book

Cash Book is a sub-division of Journal recording transactions pertaining to cash receipts and payments. Firstly, all cash transactions are recorded in the Cash Book wherefrom they are posted subsequently to the respective ledger accounts. The Cash Book is maintained in the form of a ledger with the required explanation called as narration and hence, it plays a dual role of a journal as well as ledger. All cash receipts are recorded on the debit side and all cash payments are recorded on the credit side. All cash transactions are recorded chronologically in the Cash Book. The Cash Book will always show a debit balance since payments cannot exceed the receipts at any time.

Kinds of Cash Book: From the above it can be observed that the Cash Book serves as a subsidiary books as well as ledger. Depending upon the nature of business and the type of cash transactions, various types of Cash books are used. They are:

- a) Single Column Cash Book
- b) Two Column Cash Book or Cash Book with cash and discount columns.
- c) Three Columnar Cash Book or Cash Book with cash, bank and discount columns.
- d) 'Bank' Cash Book or Cash Book with bank and discount columns.
- e) Petty Cash Book.

a) Single or Simple Column Cash Book : This is the simplest form of Cash Book and is used when payments and receipts are mostly in the form of cash and where usually no cash discount is allowed or received. But, when transactions involving discounts are effected, it is recorded in a separate ledger account. The ruling of Single Column Cash Book is as follows:

Single Column Cash Book

Dr.					Cr.				
Date	Particulars	R.No.	L.F.	Rs.	Date	Particulars	V.No.	L.F.	Rs.

From the above it can be observed that the Single Column Cash Book is just like a ledger account. When cash is received, it is recorded on the debit side, i.e., 'Receipts Side' of the Cash Book, with the date on which the transaction is effected, in the 'Date Column', the name of the party or the head of a nominal account, from whom or for which the cash has been received, in the 'Particulars Column', the receipt number, with which the cash has been received by the cashier, in the 'R. No. Column' and the money value of the transaction in the 'Amount Column' respectively. The L.F. (Ledger Folio) column is for entering the reference ledger folio number when posting to the ledger is made.

Similarly when payment of cash is made, it is recorded on the credit side, i.e., "Payments Side" of the Cash Book, with the date in the 'Date Column', the name of the party or head of a nominal account in the 'Particulars Column', the voucher number in the 'V. No. Column', and the money value of the transaction in the 'Amount Column' respectively. The voucher represents the supporting document for all cash payments effected.

Positing: Once the Cash Book is entered with all the cash transactions, posting of the entries is made to the respective ledger accounts subsequently. For posting, from the debit side of the Cash Book, the concerned accounts are credited and from the credit side, the concerned accounts are debited.

b) Two Column Cash Book or Cash Book with Cash and Discount Columns: This type of Cash Book is used when cash transactions involving discount allowed or received are effected. Usually, discount is allowed when payments are promptly made by the customers and discount is enjoyed when payments are promptly made by the business. In this two column Cash Book, instead of only one column for

--	--	--	--	--	--	--	--	--	--	--	--	--	--

All cash receipts are entered on the debit side in the cash column and all cash payments on the credit side in the cash column of the Cash Book. Amounts paid into the bank or deposited are recorded on the debit side in the bank column and all payments made by cheques are recorded on the credit side in the bank column.

d) 'Bank' Cash Book or Cash Book with Bank and Discount Columns: In case of a business where all transactions are effected through bank, i.e., all receipts are banked (deposited into the bank) on the same day and all payments are made by cheques only, the cash column in the cash book is of no use. Hence, the Cash Book with bank and discount columns alone is maintained. The ruling of a Cash Book with bank and discount column is as follows:

Two Column Cash Book (with Bank and Discount Columns)

Dr.							Cr.				
Date	Particulars	R.No.	L.F.	Discount allowed	Bank Rs.	Date	Particulars	V.No.	L.F.	Discount received	Bank Rs.

e) Petty Cash Book: The word 'petty' has its origin from the French word 'petit' which means small. The petty cash book is used to record items like carriage, cartage, entertainment expenses, office expenses, postage and telegrams, stationery, etc. The person who maintains this book is called the 'petty cashier'. The petty cash book is used by many business concerns to save the much valuable time of the senior official, who usually writes up the main cash book, to prevent over burdening of the main cash book with so many petty items and to find out readily and easily information about the more important transactions.

The amount required to meet out various petty items is estimated and given to the petty cashier at the beginning of the stipulated period say a fortnight or a month. When the petty cashier finds shortage of money, he has to submit the petty cash book, after making all the entries, to the chief cashier for necessary verifications. The chief cashier in turn, verifies all the entries with supporting vouchers and disburses cash or issues cheque for the exact amount spent.

Columnar Petty Cash Book or analytical Petty Cash Book

In this cash book various items of petty cash payments are analysed and separate analytical columns are provided for recording each and every item. The amount of cash received from the chief cashier for meeting out the petty expenses is recorded on the debit side and the actual cash payments towards various petty items are recorded on the credit side in the total as well as analytical columns.

The analytical column is provided for each usual head of expense like postage & telegrams, printing & stationery, carriage & cartage, traveling expenses, entertainment expenses, office expenses, sundry expenses, etc. Subsequently, the totals of these analytical columns are posted to the respective ledger accounts which save labour used in posting each item of payment separately in the ledger. The balancing of petty cash book is done in the total payments column.

Where the debit side (Receipts) exceeds that of the credit side (in the totals column-Payments), it represents the unspent balance of cash remaining with the petty cashier.

4.3 BASIC DOCUMENT FOR SUBSIDIARY BOOKS

4.3.1 Inward Invoice:

This is the document sent by the suppliers of goods giving details of goods sent, price, value, discount etc. It is the basis for entries in purchases book.

4.3.2 Outward Invoice:

This is a document sent by the firm to the customers, showing the details of goods supplied, their price and value, discounts etc., it is the basis for writing sales book.

4.3.3 Debit Note:

It is a simple statement sent by a person to another person showing the amount debited to the account of the latter along with a brief explanation. The debit notes are issued by a trader relating to purchase returns in order to put up his claim for abatement of his dues to the other party. Debit notes are serially numbered and are similar to invoices although they are usually printed in red ink.

4.3.4 Credit Note:

It is nothing but a statement sent by one person to another person showing the amount credited to the account of the latter along with a brief explanation. The credit notes are used for sales return in order to intimate related abatement and are similar to invoice although they are usually printed in red ink.

4.3.5 Cash Receipts and Vouchers:

These are the vouchers and receipts for cash received and paid. Entries in cash book are made on the strength of the vouchers and receipts. They are also useful for auditing purpose.

Contra Entries

For any single transaction the same account cannot be debited and credited. But since cash and bank accounts are maintained in the cash book, the debit and credit may be found in the two different accounts in the Cash Book. They are transactions which affect both the sides of the Cash Book. For instance, when cash is deposited into the bank, bank account should be debited and cash account should be credited. Hence, on the debit side of the Cash Book, 'To Cash' is written in the particulars column and the amount is entered in the bank column. Similarly, on the credit side of the Cash Book, 'By Bank' is written in the particulars column and the amount is entered in the cash column.

When cash is withdrawn from the bank, on the debit side of the Cash Book, 'To Bank' is written in the particulars column and the amount is written in the cash column. Likewise, on the credit side of the Cash Book, 'By Cash' is written in the particulars column and amount is entered in the bank column. Therefore, those entries which appear on both the sides of the Cash Book are called Contra Entries and they are identified and denoted in the Cash Book itself by writing the letter 'C' in the Ledger Folio Columns on either side. For these transactions, as

double entry procedure is completed in the cash book itself, no further positing is made in the ledger.

In a three columnar Cash Book, cash and bank columns are balanced as any other ledger account and discount columns are imply totaled. To know the balance of the discount columns, a separate account, viz., discount account is opened in the ledger. While the cash column will always show a debit balance, the bank column may show a credit balance at times. The credit balance in the bank column represents nothing but bank overdraft.

4.4 ADVANTAGE OF SUBSIDIARY BOOKS

The advantages of maintaining special journals can be summarized as under:

4.4.1 Division of work

The division of journal resulting in division of work ensures more clerks working independently in recording original entries in day books.

4.4.2 Facilitate posting

Because the transactions of one nature are recorded at one place, the posting of real account is highly facilitated.

4.4.3 Time Saving

Due to division of work, it is possible to perform various accounting processes simultaneously. Thus, lesser time is required to complete accounting records.

4.4.4 Minimum frauds and errors

Systematic recording of business transactions in special journals reduces the possibility of frauds and errors. It also helps in location of errors, if any.

4.4.5 Better information

A lot of useful data like credit sales, credit purchases, returns etc., is made available which is not possible in journal system.

4.4.6 Management decisions facilitated

Since transactions of a similar nature are recorded at one place, the management can have the benefit of the trend and distributional pattern in planning and making decisions.

4.4.7 Specialisation and efficiency

When the same work is allotted to a particular person over a period of time, he acquires full knowledge of it and becomes efficient in handling it. Thus, the accounting work will be done efficiently

4.5 IMPREST SYSTEM

In this system, the petty cashier is provided with a sum of cash which is termed as 'float' after taking into consideration the possible kinds of expenses which would be incurred for a specific period, viz., a week or a month. The petty cashier, at the end of such period, submits the petty cash book, with all entries passed, to the chief cashier. The chief cashier, in turn, will verify all the entries with the supporting vouchers and gives the actual amount spent on various petty items. This would bring the petty cash balance to the original amount with which he has begun. This system of maintaining the original amount of cash as such is known as 'Imprest System of maintaining Petty Cash Book'.

4.6. DISCOUNTS

4.6.1 Trade discount

When a customer buys goods regularly or buys large quantity or buys for a large amount, the seller is usually inclined to allow a concession in price. He will calculate the total price according to the list of catalogue. But after the total is arrived at, he will make a deduction 5% or 10% depending upon his business policy. This deduction is known as Trade discount.

4.6.2 Cash Discount

An amount which is allowed for the prompt settlement of debt arising out of a sale within a specified time and calculated on a percentage basis is known as cash discount, i.e., it is always associated with actual payment.

4.6.3 Difference Between Trade Discount and Cash Discount

Trade discount	Cash discount
It is given by the manufacturer or the wholesaler to a retailer and not to others.	It may be allowed by seller to any debtor.
It is allowed on a certain quantity being purchased.	It is allowed on payment being made before a certain date.
It is a reduction in the catalogue price of an article.	It is a reduction in the amount due by a debtor.
It is not usually accounted for in the books since the net amount (i.e. after deducting discount) is shown.	This discount must have to be accounted for in the books since it is deducted from the gross selling price.
It is allowed only when there is a sale either cash or credit.	It is allowed only when there is cash receipt or cash payment including cheques.
It is usually given at the same rate which is applicable to all customers.	It varies from customer to customer depending on the time and period of payment.
It is allowed or not allowed according to sales policy followed by a business concern.	It is allowed only on condition. The dues should be paid within the stipulated time. If not, the debtor is not eligible for cash discount.

4.7 ILLUSTRATIONS**Illustration 1**

Enter the following transactions in the Purchases Book and post the same in the relevant ledger accounts.

2001			Rs.
Aug. 1	Bought goods from Sivika		1,500
Aug. 4	Bought goods from Nithi		1,000
Aug. 8	Bought goods from Abi		500

Solution:**Purchases Books**

Date	Particulars	L.F.	Inward Invoice Number	Amount Rs.
2001				
Aug. 1	Sivika			1,500
Aug. 4	Nithi			1,000
Aug. 8	Abi			500
				3,000

**Ledger
Purchases A/c**

Dr.			Cr.		
Date	Particulars	Rs.	Date	Particulars	Rs.
2001			2001		
Aug. 12	To Sundries	3,000			

Sivika's A/c

Dr.			Cr.		
Date	Particulars	Rs.	Date	Particulars	Rs.
2001			2001		
			Aug. 1	By Purchase A/c	1,500

Nithi's A/c

Dr.			Cr.		
Date	Particulars	Rs.	Date	Particulars	Rs.
2001			2001		
			Aug. 4	By Purchase A/c	1,000

Abi's A/c

Dr.			Cr.		
Date	Particulars	Rs.	Date	Particulars	Rs.
2001			2001 Aug. 8	By Purchase A/c	500

Illustration 2

Enter the following transactions in sales Book and post the same in the relevant ledger accounts.

			Rs.
2002			
Aug. 15	Sold goods to Prabu		2,000
Aug. 18	Sold goods to Bala		1,500
Aug. 22	Sold goods to Mano		1,000

Solution:**Sales Book**

Date	Particulars	L.F.	Inward Invoice Number	Amount Rs.
2002				
Aug. 15	Prabu			2,000
Aug. 18	Bala			1,500
Aug. 22	Mano			1,000
				4,500

Ledger**Sales A/c**

Dr.			Cr.		
Date	Particulars	Rs.	Date	Particulars	Rs.
2002			2002 Aug. 31	By Sundries	4,500

Prabu's A/c

Dr.			Cr.		
Date	Particulars	Rs.	Date	Particulars	Rs.
2002 Aug. 15	To Sales A/c	2,000	2002		

Bala's A/c

Dr.			Cr.		
Date	Particulars	Rs.	Date	Particulars	Rs.
2002			2002		
Aug. 18	To Sales A/c	1,500			

Mano's A/c

Dr.			Cr.		
Date	Particulars	Rs.	Date	Particulars	Rs.
2002			2002		
Aug. 22	To Sales A/c	1,000			

Illustration 3

Enter the following transactions in proper Subsidiary Books and post the same in the relevant ledger accounts.

2003		Rs.
Aug. 1	Bought goods from Ganga	2,500
Aug. 2	Sold goods to Kaveri	1,500
Aug. 5	Yamuna sold goods to us	1,500
Aug. 8	Krishna purchased goods from us	1,200
Aug. 11	Received goods returned by Kaveri	150
Aug. 13	Returned goods to Ganga	100
Aug. 17	Sold goods to Ponni	800
Aug. 22	Purchased goods from Sindhu	900
Aug. 27	Returned goods to Yamuna	150

Solution:**Purchases Book**

Date	Particulars	L.F.	Inward Invoice Number	Rs.
2003				
Aug. 1	Ganga			2,500
Aug. 5	Yamuna			1,500
Aug. 22	Sindhu			900
				4,900

Sales Book

Date	Particulars	L.F.	Outward Invoice Number	Rs.
2003				
Aug. 2	Kavari			1,500
Aug. 8	Krishna			1,200
Aug. 17	Ponni			800
				3,500

Purchases Returns Books

Date	Name of Supplier	L.F.	Debit Note	Rs.
2003 Aug. 13	Ganga			100
Aug. 27	Yamuna			150
				250

Sales Returns Book

Date	Name of Customer	L.F.	Credit Note	Rs.
2003 Aug. 11	Kaveri			150
				150

**Ledger
Purchases A/c**

Dr.			Cr.		
Date	Particulars	Rs.	Date	Particulars	Rs.
2003 Aug. 31	To Sundries A/c	4,900	2003		

Sales A/c

Dr.			Cr.		
Date	Particulars	Rs.	Date	Particulars	Rs.
2003			Aug.31	By Sundries	3,500

Purchases Returns A/c

Dr.			Cr.		
Date	Particulars	Rs.	Date	Particulars	Rs.
2003			Aug. 31	By Sundries	250

Sales Returns A/c

Dr.			Cr.		
Date	Particulars	Rs.	Date	Particulars	Rs.
2003 Aug. 31	To Sundries	150			

Kaveri's A/c

Dr.			Cr.		
Date	Particulars	Rs.	Date	Particulars	Rs.
2003 Aug. 2	To Sales A/c	1,500	2003 Aug. 11	By Sales Returns A/c	150
				By Balance c/d	1350
		1,500			1,500
Sept. 1	To Balance b/d	1,350			

Krishna's A/c

Dr.			Cr.		
Date	Particulars	Rs.	Date	Particulars	Rs.
2003 Aug. 8	To Sales A/c	1,200	2003 Aug. 31	By Balance c/d	1,200
		1,200			1,200
Sept. 1	To Balance b/d	1,200			

Ponni's A/c

Dr.			Cr.		
Date	Particulars	Rs.	Date	Particulars	Rs.
2003 Aug. 17	To Sales A/c	800	2003 Aug. 31	By Balance c/d	800
		800			800
Sept. 1	To Balance b/d	800			

Ganaga's A/c

Dr.			Cr.		
Date	Particulars	Rs.	Date	Particulars	Rs.
2003 Aug. 13	To Purchases Returns A/c	100	2003 Aug. 1	By Purchases A/c	2,500
Aug. 31	To Balance c/d	2,400			
		2,500			2,500
			Sept. 1	By Balance b/d	2,400

Yamuna's A/c

Dr.			Cr.		
Date	Particulars	Rs.	Date	Particulars	Rs.
2003 Aug. 27	To Purchases Returns A/c	1,500	2003 Aug. 5	By Purchases A/c	1,500
Aug. 31	To Balance c/d	1,350			
		1,500			1,500
		1,350	Sept. 1	To Balance b/d	1,350

Sindhu's A/c

Dr.			Cr.		
Date	Particulars	Rs.	Date	Particulars	Rs.
2003 Aug. 31	To Balance c/d	900	2003 Aug. 22	By Purchases A/c	900
		900			900
		1,350	Sept. 1	To Balance b/d	900

Illustration 4

Enter the following transactions in the Bills Receivable Book and post the same in the relevant ledger accounts.

1998

- Aug. 1 Received from Kandan a bill duly accepted for Rs.1,500 Payable 3 month after date.
- Aug. 9 Drew a 2 months bills on Velan for Rs.1,200 which was duly accepted and has been discounted.
- Aug. 19 Kumaran accepted a 3 month bill drawn by us for Rs.1,100 payable at Canara Bank, Salem.

Solution:**Bills Receivable Book**

Sl. No.	Date of Receipt	L.F.	Drawer	Acceptor	Term	Due Date	Rs.	Remarks
1.	Aug. 1, 1998		Self	Kandan	3 mths.	Nov. 4, '98	1,500	-
2.	Aug. 9, 1998		Self	Velan	2 mths.	Oct. 12, '98	1,200	Discounted
3.	Aug. 19, 1998		Self	Kumaran	3 mths.	Nov. 22, '98	1,100	-
							<u>3,800</u>	

Ledger**Bills Receivable A/c**

Dr.				Cr.	
Date	Particulars	Rs.	Date	Particulars	Rs.
1998 Aug. 31	To Sundries	3,800	Aug. 31	By Balance c/d	3,800
		3,800			3,800
Sept. 1	To Balance b/d	3,800			

Kandan's A/c

Dr.			Cr.		
Date	Particulars	Rs.	Date	Particulars	Rs.
1998			1998 Aug. 1	By Bills Receivable A/c	1,500

Velan's A/c

Dr.			Cr.		
Date	Particulars	Rs.	Date	Particulars	Rs.
1998			1998 Aug. 9	By Bills Receivable A/c	1,200

Kumaran's A/c

Dr.			Cr.		
Date	Particulars	Rs.	Date	Particulars	Rs.
1998			1998 Aug. 19	By Bills Receivable A/c	1,100

Illustration 5

Enter the following in the Bills Payable Book and post them in the ledger.

1998

- Sept. 1 We accept Sundar & Co's. bill for Rs.1,000, 2 months duration payable at Bank of India.
- Sept. 21 Maduri & Co. drew on us a 3 months bill for Rs.2,050 which we accepted and returned.
- Sept. 28 Swami's bill for Rs.1,200 accepted by us, the bill being due after 3 months

Bill Payable Book

Sl. No.	Date of Acceptance	Drawer	Payee	L.F.	Where Payable	Date of bill	Term	Due Date	Rs.	Remarks
1.	Sept. 1, 1998	Sundar & Co.	Sundar & Co.		Bank of India	Sept. 1, 1998	2 mth.	Nov. 4, 1998	1,000	-
2.	Sept. 21, 1998	Maduri & Co.	Maduri & Co.		Bank of India	Sept. 21, 1998	3 mth.	Dec. 24, 1998	2,050	Returned
3.	Sept. 28, 1998	Swami	Swami		Bank of India	Sept. 28, 1998	3 mth.	Dec. 31, 1998	1,200	-
									4,250	

**Ledger
Bills Payable A/c**

Dr				Cr.			
Date		Particulars	Rs.	Date		Particulars	Rs.
1998							
Sept.	30	To Balance c/d	4,250	Sept.	30	By Sundries	4,250
			4,250				4,250
				Oct.	1	By Balance b/d	4,250

Sundar & Co's A/c

Dr				Cr.		
Date		Particulars	Rs.	Date	Particulars	Rs.
1998				1998		
Sept.	1	To Bills Payable A/c	1,000			

Maduri & Co's A/c

Dr				Cr.		
Date		Particulars	Rs.	Date	Particulars	Rs.
1998				1998		
Sept.	21	To Bills Payable A/c	2,050			

Swami's A/c

Dr				Cr.		
Date		Particulars	Rs.	Date	Particulars	Rs.
1998				1998		
Sept.	28	To Bills Payable A/c	1,200			

Illustration 6

Enter the following transactions in a Single Column Cash Book and post the same in the relevant ledger accounts.

1998			Rs.
July	1	Cash on hand	2,000
July	2	Goods purchased for cash	700
July	3	Paid Carriage Inwards	70
July	4	Cash Sales	600
July	5	Paid Salaries	1,100
July	6	Cash received from Shankar	1,100
July	10	Sale of old machinery	800
July	12	Cash Sales	700

July	14	Goods purchased from Kamal & Co. on credit	600
July	16	Goods sold to Sathyan on credit	500
July	18	Stationery purchased	400
July	19	Lent to Vignesh	120
July	20	Received from Dinesh	150
July	22	Withdrawn from business for private use	140
July	23	Cash Sales	150
July	24	Paid fro repairs	60
July	25	Paid Rent	150
July	31	Vignesh repaid his loan	120

Solution**Single Column Cash Book**

Dr.					Cr.				
Date	Particulars	R.No.	L.F.	Rs.	Date	Particulars	V.No.	L.F.	Rs.
1998					1998				
July 1	To Balance b/d			2,000	July 2	By Purchases A/c(Cash sales effected)			700
July 4	To Sales A/c (Cash sales effected)			600	July				
July 6	To Shankar's A/c (Received from Shankar)			1,100	July 3	By Carriage Inwards A/c (Carriage Inwards paid)			70
July 10	To Machinery A/c (Sale of old machinery)			800	July 5	By Salaries A/c (Salaries padi)			1,100
July 12	To Sales A/c (Cash sales effected)			700	July 18	By Stationery A/c (Stationery bought)			400
July 20	To Dinesh's A/c (Received from Dinesh)			150	July 19	By Vignesh's A/c (Lent to Vignesh)			120
July 23	To Sales A/C (Cash sales effected)			150	July 22	By Drawings A/c (Withdrawn from business for private use)			140
July 31	To Vignesh;s A/c (Vignesh repaid his loan)			120					

				July 24	By Repairs A/c (Paid for repairs)		60
				July 25	By Rent A/c (Rent Paid)		150
				July 31	By Balance c/d		2,880
			5,602				5,620
Aug. 1	To Balance b/d		2,880				

Note: The transactions effected on July 14 & 16 represent credit transactions and hence not entered in the Cash Book.

Ledger Sales A/c

Dr.			Cr.		
Date	Particulars	Rs.	Date	Particulars	Rs.
1998			1998		
July 31	To Balance c/d	1,450	July 4	By Cash A/c	600
			July 12	By Cash A/c	700
			July 23	By Cash A/c	150
		1,450			1,450
			Aug. 1	By Balance b/d	1,450

Purchases A/c

Dr.			Cr.		
Date	Particulars	Rs.	Date	Particulars	Rs.
1998			1998		
July 2	To Cash A/c	700	July 31	By Balance c/d	700
		700			700
Aug. 1	To Balance b/d	700			

Carriage A/c

Dr.			Cr.		
Date	Particulars	Rs.	Date	Particulars	Rs.
1998			1998		
July 3	To Cash A/c	70	July 31	By Balance c/d	70
		70			70
Aug. 1	To Balance b/d	70			

Salaries A/c

Dr.			Cr.		
Date	Particulars	Rs.	Date	Particulars	Rs.
1998			1998		
July 5	To Cash A/c	1,100	July 31	By Balance c/d	1,100
		1,100			1,100
Aug. 1	To Balance b/d	1,100			

Stationery A/c

Dr.			Cr.		
Date	Particulars	Rs.	Date	Particulars	Rs.
1998			1998		
July 18	To Cash A/c	400	July 31	By Balance c/d	400
		400			400
Aug. 1	To Balance b/d	400			

Repairs A/c

Dr.			Cr.		
Date	Particulars	Rs.	Date	Particulars	Rs.
1998			1998		
July 24	To Cash A/c	60	July 31	By Balance c/d	60
		60			60
Aug. 1	To Balance b/d	60			

Rent A/c

Dr.			Cr.		
Date	Particulars	Rs.	Date	Particulars	Rs.
1998			1998		
July 25	To Cash A/c	150	July 31	By Balance c/d	150
		150			150
Aug. 1	To Balance b/d	150			

Drawings A/c

Dr.			Cr.		
Date	Particulars	Rs.	Date	Particulars	Rs.
1998			1998		
July 22	To Cash A/c	140	July 31	By Balance c/d	140
		140			140
Aug. 1	To Balance b/d	140			

Machinery A/c

Dr.			Cr.		
Date	Particulars	Rs.	Date	Particulars	Rs.
1998			1998		
July 31	To balance c/d	800	July 10	By Cash A/c	800
		800			800
			Aug. 1	To Balance b/d	800

Shankar's A/c

Dr.			Cr.		
Date	Particulars	Rs.	Date	Particulars	Rs.
1998			1998		
July 31	To Balance c/d	1,100	July 6	By Cash A/c	1,100
		1,100			1,100
			Aug. 1	By Balance b/d	1,100

Vignesh's A/c

Dr.			Cr.		
Date	Particulars	Rs.	Date	Particulars	Rs.
1998			1998		
July 19	To Cash A/c	120	July 31	By Cash A/c	120
		120			120

Dinesh's A/c

Dr.			Cr.		
Date	Particulars	Rs.	Date	Particulars	Rs.
1998			1998		
July 31	To Balance c/d	150	July 20	By Cash A/c	150
		150			150
			Aug. 1	By Balance b/d	150

Check your progress 4

List out any three different between Trade discount and Cash discount

Notes: (a) Write your answer in the space given below.

(b) Check your answer with the ones given at the end of this Lesson (pp. 68).

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Illustration 7

Enter the following transactions in a two column Cash Book and prepare discount account in the ledger

1998			Rs.
July	1	Cash on Hand	1,200
July	2	Received from X	3,900
		Allowed him discount	100
July	5	Purchased goods for cash	4,100
July	7	Paid to M	850
		Discount allowed by him	50
July	9	Cash Sales	4,900

July	11	Withdrew from bank	5,500
July	15	Credit purchase from Y	3,000
July	21	Paid to Y in full settlement	2,800
July	22	Received from K	1,250
		Allowed him discount	50
July	23	Drew Cheque for office use	200
July	25	Paid office rent	800
July	28	Received interest on investments	3,000
July	31	Paid into bank	3,150

Solution**Two Column Cash Book (with Cash and Discount Columns)**

Dr.						Cr.					
Date	Particulars	R.No.	L.F.	Discount allowed	Rs.	Date	Particulars	V.No.	L.F.	Discount allowed	Rs.
1998						1998					
July 1	To Balance b/d				1,200	July 5	By Purchases A/c (Cash Purchases Made)				4,100
July 2	To X's A/c (Amount received from X and discount allowed)			100	3,900	July 7	By M's A/c (Amount paid to M and discount received)			50	850
July 9	To Sales A/c (Cash Sales effected)				4,900	July 21	By Y's A/c (Amount paid to Y and discount received)			200	2,800
July 11	To Bank A/c (Withdrawn from bank)				5,500	July 25	By Office Rent A/c (Office rent paid)				800
July 22	To K A/c (Amount received from K and discount allowed)			50	1,250	July 31	By Bank A/c (Amount paid into the bank)				3,150
July 23	To Bank A/c (Withdrawn from bank for office use)				200	July 31	By Balance c/d				8,250
July 28	To Interest on investment A/c (Interest received on investments)				3,000						
				150	19,950					250	19,950
Aug. 1	To Balance b/d				8,250						

**Ledger
Discount A/c**

Dr.			Cr.		
Date	Particulars	Rs.	Date	Particulars	Rs.
1998			1998		
July 30	To Sundries	150	July 31	By Sundries	250
July 31	To Balance c/d	100			
		250			250
			Aug. 1	By Balance b/d	100

Illustration 8

From the following transactions given below you are require to prepare three columnar Cash Book.

			Rs.
1998			
July	1	Cash on hand	600
		Cash at bank	9,670
July	2	Received cash from Arul	1,900
		Allowed him discount	100
July	4	Paid Azar by cheque	800
		Discount received	30
July	6	Purchased Goods and paid by cheque	2,100
July	8	Deposited with bank	2,100
July	10	Sold goods to Anil on credit	1,100
July	12	Sold goods & received payment by cheque	900
July	15	Received a cheque from Anil in full settlement of his account	1,050
July	17	Withdrawn from bank for office use	900
July	19	Purchased goods from K& Co.	3,000
July	19	Paid K & Co. by cheque	2,900
		Discount received	100
July	20	Paid telephone charges	100
July	23	Paid.Ahmad by cheque	684
		Discount received	16
July	24	Cash Sales	1,900
July	26	Received cheque from Antony and sent to the bank	480
		Discount allowed	20
July	27	Purchased a new machinery for office use by cheque	4,000
July	28	Bank intimated that.Antony's cheque has been dishonored	
	31	Deposited with bank	600
July	31	Bank charges as shown in the pass book	26

Solution:**Three Columnar Cash Book**

Dr.						Cr.					
Date	Particulars R.No.	L.F.	Discount allowed	Cash	Bank	Date	Particulars R.No.	L.F.	Discount received	Cash	Bank
1998			Rs.	Rs.	Rs.	1998			Rs.	Rs.	Rs.
July 1	To Balance b/d			600	9,670	July 4	By Azar's A/c		30		800
July 2	To Arul's A/c		100	1,900		July 6	By Purchases A/c				2,100
July 8	To Cash A/c	C			2,100	July 8	By Bank A/c	C		2,100	
July 12	To Sales A/c				900	July 17	By Cash A/c	C			900
July 15	To Anil's A/c		50		1,050	July 19	By Purchase A/c		100		2,900
July 17	To Bank A/c	C		900		July 20	By Telephone Charges A/c			100	
July 24	To Sales A/c			1,900		July 23	By Ahmad's A/c		16		684
July 26	To Antony's A/c		20		480	July 27	By New Machinery A/c				4,000
July 31	To Cash A/c	C			600	July 28	By Antony's A/c		20		480
						July 31	By Bank A/c	C		600	
						July 31	By Bank Charges A/c				26
						July 31	By Balance c/d			2,500	2,510
			170	5,300	14,800				166	5,300	14,800
Aug. 1	To Balance b/d			2,500	2,510						

Illustration 9

Enter the following transactions in Cash Book with bank and discount columns only, assuming all receipts are banked on the same day and that all payments are made by means of cheques only.

1998			Rs.
July	1	Bank Balance	5,000
July	4	Purchased goods for each	1,600
July	5	Sold goods to 'A' for cash	1,300
July	10	Received cheque from 'W' (in full settlement of Rs.400)	378
July	12	Paid 'H'	375
		Discount allowed by him	25
July	13	Received Commission from 'G'	231
July	15	Paid Traveling Expenses to 'J'	45
July	18	Received for Cash Sales	245
July	19	Paid to 'S' for office furniture	185
July	20	Paid Electricity Charges	35
July	21	Paid Office Rent	100

July	24	Drew self cheque for personal use	300
July	25	Received from 'N'	245
July		Discount allowed	25
July	29	Drew cheque for petty cash	190
July	30	Drew cheque for salaries	360
July	31	Paid to 'M' (in full settlement of Rs.485)	450

Solution:**Cash Book with Bank and Discount Columns**

Dr.

Cr.

Date	Particulars	R.No.	L.F.	Discounts Rs.	Bank Rs.	Date	Particulars	V.No.	L.F.	Discount Rs.	Bank Rs.
1998						1998					
July 1	To Balance b/d				5,000	July 4	By Purchases A/c				1,600
July 5	To Sales A/c				1,300	July 12	By 'H' A/c			25	375
July 10	To 'W' A/c			22	378	July 15	By Travelling Expenses A/c				45
July 13	To commission A/c				231	July 19	By Office Furniture A/c				185
July 18	To Sales A/c				245		By Electricity Charges A/c				35
July 25	To 'N' A/c			25	245	July 20	By Office rent A/c				100
						July 21	By Drawings A/c				300
						July 24	By Petty Cash A/c				190
						July 29	By Salaries A/c				360
						July 30	By 'M' A/c			35	450
						July 31	By Balance c/d				3,759
						July 31					
				47	7,399					35	7,399
Aug. 1	To Balance b/d										

Illustration 10

Enter the following transactions in a petty cash book maintained on Imprest System with analytical columns:

1998			Rs.
July	15	Received from the chief cashier	250
July	16	Bought stamps	10
July	17	Paid cartage	25
July	18	Tea and Lunch expenses to customers	35
July	19	Telegram sent	5
July	20	Paid Taxi Hire	8
July	21	Purchased envelopes	6
July	22	Paid for repairs of typewriter	21

July	23	Purchased one bottle of ink	10
July	25	Purchased Clips	10
July	27	Paid Railway far to manager	30
July	31	Paid to Coolie	5

Solution:**Analytical Petty Cash Book**

Dr.												Cr.
Cash Received	Cash Book Folio	Date	Cr. Particulars	V.No.	Total Payments	Carriage & Cartage	Stationery	Travelling Expenses	Office Expenses	Entertainment Exps.	Postage & Tele-	
		1998			Rs.	Rs.	Rs.	Rs.	Rs.	Rs.		
250		July 15	To Cash A/c									
		July 16	By Stamps A/c		10						10	
		July 17	By Cartage A/g		25	25						
		July 18	By Entertainment Exps. A/c		35					35		
		July 19	By Telegram		5						5	
		July 20	By Taxi Hire		8			8				
		July 21	By Envelopes		6		6					
		July 22	By Typewriter Repairs		21				21			
		July 23	By Bottle of ink		10		10					
		July 25	By clips		10		10					
		July 27	By Railways Fare		30			30				
		July 31	By Coolie hire		5	5						
					165	30	26	38	21	35	15	
		July 31	By Balance c/d		85							
250					250							
85		Aug. 1	To Balance b/d									
165		Agu. 1	To Cahs A/c									

4.10 LET US SUM UPS

Subsidiary books reduce clerical work considerably. Credit purchases, credit sales and cash details are frequently needed items which can be known at any time with the help of Subsidiary books. Cash discount, importance of cash discount, cash bank details can be known at any time with the help of Subsidiary books

4.11 Lesson-End Activities:

- 1 What do you understand by Subsidiary books?
- 2 What are the advantages of Subsidiary books?
- 3 Define purchases book and sales book.
- 4 What is journal proper?
- 5 What is petty cash book?
- 6 What are the different kinds of Subsidiary books?
- 7 What do you mean by Cash book?
- 8 What are the kinds of Cash books?
- 9 Define trade discount and cash discounts.
- 10 Distinguish between trade discount and cash discount
- 11 Write short notes on
 - a) Inward invoice b) Outward invoice c) Debit and Credit note
 - d) Contra Entries e) Imprest system.

4.12 Check your Progress

Your answer may include any five the following:

1. Trade discount is given by the manufacturer or the wholesaler to a retailer and not to others. Cash discount may be allowed by seller to any debtor.
2. Trade discount is allowed on a certain quantity being purchased. Cash discount is allowed on payment being made before a certain date.
3. Trade discount is a reduction in the catalogue price of an article. Cash discount is a reduction in the amount due by a debtor.
4. Trade discount is not usually accounted for in the books since the net amount (i.e. after deducting discount) is shown. Cash discount must have to be accounted for in the books since it is deducted from the gross selling price.
5. Trade discount is allowed only when there is a sale either cash or credit. Cash discount is allowed only when there is cash receipt or cash payment including cheques.

4.13 Points for Discussion

1. From the following transaction you are require to prepare suitable subsidiary books and post them in the relevant ledger account.

2002			Rs.
March	1	Purchased goods from Senthil	4000
March	2	Sold goods to Selvi	1500
March	4	Return goods to Senthil	1000
March	5	Sold goods to Sivika	500
March	6	Goods return by Selvi	500
March	8	Sold goods from Aruna	400

March	10	Bought goods from Mano	2500
March	12	Bought goods from Sethu	2800
March	15	Goods return to Mano	500

2. From the following transaction you are require to prepare Three Column Cash book.

2000			Rs.
Jan.	1	Cash balance	4000
		Bank balance	25000
Jan.	2	Cash sales	31000
Jan.	8	Cash purchases	22000
Jan.	15	Purchases of machinery by issue of cheque	10000
Jan.	20	Paid into bank	15000
Jan.	25	Rent paid by the cheque	1500
Jan.	30	Salary paid	2500

4.14 References

1. Gupta R.L. – Advanced Accountancy
2. Grwal T.B. – Double Entry Book Keeping.

LESSON 5 TRIAL BALANCE

Contents:

- 5.0 Aims and objectives**
- 5.1 Introduction**
- 5.2 Meaning and Definition of Trial balance**
 - 5.2.1 Meaning
 - 5.2.2 Definition
- 5.3 Objectives of preparing Trial balance**
- 5.4 Features of Trial balance**
- 5.5 Limitations of Trial balance**
- 5.6 Methods of preparing trial balance**
 - 5.6.1 Total method
 - 5.6.2 Balance method
- 5.12 Illustrations**
- 5.13 Let us Sum Up**
- 5.14 Lesson-End Activities**
- 5.15 Check Your Progress**
- 5.16 Points for Discussion**
- 5.17 References**

5.0 AIMS AND OBJECTIVES

- i) To study the meaning and definition of Trial balance.
- ii) To know the objectives, features and limitations of Trail balance.
- iii) To understand the methods of preparing Trial balance.

5.1 INTRODUCTION

According to the dual aspect concept, the total of debit balance must be equal to the credit balance. It is a must that the correctness of posting to the ledger accounts and their balances be verified. This is done by preparing a trail balance.

5.2 MEANING AND DEFINITION

5.2.1 Meaning

Trial balance is a statement prepared with the balances or total of debits and credits of all the accounts in the ledger to test the arithmetical accuracy of the ledger accounts. As the name indicates it is prepared to check the ledger balances. If the total of the debit and credit amount columns of the trail balance are equal, it is assumed that the posting to the ledger in terms of debit and credit amounts is accurate. The agreement of a trail balance ensure arithmetical accuracy only, A concern can prepare trail balance at any time, but its preparation as on the closing date of an accounting year is compulsory.

5.2.2 Definition

According to M.S. Gosav “Trail balance is a statement containing the balances of all ledger accounts, as at any given date, arranged in the form of debit and credit columns placed side by side and prepared with the object of checking the arithmetical accuracy of ledger postings”.

5.3 OBJECTIVES OF PREPARING A TRAIL BALANCE

- (i) It gives the balances of all the accounts of the ledger. The balance of any account can be found from a glance from the trail balance without going through the pages of the ledger.
- (ii) It is a check on the accuracy of posting. If the trail balance agrees, it proves:
 - (a) That both the aspects of each transaction are recorded and
 - (b) That the books are arithmetically accurate.
- (iii) It facilitates the preparation of profit and loss account and the balance sheet.
- (iv) Important conclusions can be derived by comparing the balances of two or more than two years with the help of trail balances of those years.

5.4 FEATURES OF TRAIL BALANCES

The following are the important features of a trail balances:

- (i) A trail balance is prepared as on a specified date.
- (ii) It contains a list of all ledger account including cash account.
- (iii) It may be prepared with the balances or totals of Ledger accounts.
- (iv) Total of the debit and credit amount columns of the trail balance must tally.
- (v) If the debit and credit amounts are equal, we assume that ledger accounts are arithmetically accurate.
- (vi) Difference in the debit and credit columns points out that some mistakes have been committed.
- (vii) Tallying of trail balance is not a conclusive proof of accuracy of accounts.

5.5 LIMITATIONS OF TRAIL BALANCE

The following are the important limitations of trail balances:

- (i) The trail balance can be prepared only in those concerns where double entry system of book- keeping is adopted. This system is too costly.
- (ii) A trail balance is not a conclusive proof of the arithmetical accuracy of the books of account. If the trail balance agrees, it does not mean that now there are absolutely no errors in books. On the other hand, some errors are not disclosed by the trail balance.
- (iii) If the trail balance is wrong, the subsequent preparation of Trading, P&L Account and Balance Sheet will not reflect the true picture of the concern.

5.6 METHODS OF PREPARING TRAIL BALANCE

A trail balance refers to a list of the ledger balances as on a particular date. It can be prepared in the following manner:

5.6.1. Total Method

According to this method, debit total and credit total of each account of ledger are recorded in the trail balance.

5.6.2. Balance Method

According to this method, only balance of each account of ledger is recorded in trail balance. Some accounts may have debit balance and the other may have credit balance. All these debit and credit balances are recorded in it. This method is widely used.

Ruling of a trail balance:

The following is the form of a trail balance

Method I: Total Method

ST's Books
Trail Balance as on.....

S.No.	Name of Account	L.F	Debit Total Amount Rs.	Credit Total Account Rs.

Method II: Balance Method:

MT's Books
Trail Balance as on.....

S.No.	Name of Account	L.F	Debit balance Rs.	Credit balance Rs.

Note: Accounts of all assets, expenses, losses and drawings are debit balances. Accounts of incomes, gains, liabilities and capital are credit balances.

Trial balance disclosed some of the errors and does not disclosed some other errors. This is given below.

A) Trial Balance disclosed by the Errors

- i) Wrong totaling of subsidiary books
- ii) Posting of an amount on the wrong side
- iii) Omission to post an amount into ledger
- iv) Double posting or omission of posting
- v) Posting wrong amount
- vi) Error in balancing

B) Trail Balance not disclosed by the Errors

- i) Error of principle
- ii) Error of omission
- iii) Errors of Commission
- iv) Recording wrong amount in the books of original entry
- v) Compensating errors

Check your progress 5

List out any three features of trial balance

Notes: (a) Write your answer in the space given below.

(b) Check your answer with the ones given at the end of this Lesson (pp. ____).

.....

5.7 ILLUSTRATIONS

Illustration 1

From the following transactions, pass journal entries, prepare ledger accounts and also prepare Trial Balance under (i) Balance method (ii) Total method.

	Rs.
1. Anil started business with	8,000
2. Purchased furniture	1,000
3. Purchased goods	6,000
4. Sold goods	7,000
5. Purchased from Raja	4,000
6. Sold to Somu	5,000
7. Paid to Raja	2,500
8. Received from Somu	3,000
9. Paid rent	200
10. Received commission	100

Solution

Journal Entries

Particulars		L.F	Dr.	Cr.
Cash A/c	Dr.		8,000	8,000
To Capital A/c				
[Started business]				
Furniture A/c	Dr.		1,000	1,000
To Cash A/c				
[Purchased furniture]				
Purchases A/c	Dr.		6,000	6,000
To Cash A/c				
[Purchased goods]				
Cash A/c	Dr.		7,000	7,000
To Sales A/c				
[Sold goods for cash]				

Purchases A/c To Raja A/c [Purchased goods]	Dr.		4,000	4,000
Somu A/c To Sales A/c [Sold goods on credit]	Dr.		5,000	5,000
Raja A/c To Cash A/c [Paid cash]	Dr.		2,500	2,500
Cash A/c To Somu A/c [Received from Somu]	Dr.		3,000	3,000
Rent A/c To Cash A/c [Paid rent]	Dr.		200	200
Cash A/c To Commission received A/c [Received commission]	Dr.		100	100

Cash Account

	Rs.		Rs.
To Capital	8,000	By Furniture	1,000
To Sales	7,000	By Purchases	6,000
To Somu	3,000	By Raja	2,500
To Commission	100	By Rent	200
		By Balance c/d	8,400
	18,100		18,100
To Balance b/d	8,400		

Capital Account

	Rs.		Rs.
To Balance c/d	8,000	By Cash	8,000
	8,000		8,000
		By Balance b/d	8,000

Furniture Account

	Rs.		Rs.
To Cash	1,000	By Balance c/d	1,000
	1,000		1,000
By Balance b/d	1,000		

Purchase Account

	Rs.		Rs.
To Cash	6,000	By Balance c/d	10,000
To Raja	4,000		
	10,000		10,000
To Balance b/d	10,000		

Sales Account

To Balance c/d	Rs. 12,000	To Cash	Rs. 7,000
		To Somu	5,000
	12,000		12,000
		By Balance b/d	12,000

Raja Account

To Cash	Rs. 2,500	By Purchase	Rs. 4,000
To Balance c/d	1,500		
	4,000		4,000
		By Balance b/d	1,500

Somu Account

To Sales	Rs. 5,000	By Cash	Rs. 3,000
		By Balance c/d	2,000
	5,000		5,000
By Balance b/d	2,000		

Rent Account

To Cash	Rs. 200	By Balance c/d	Rs. 200
	200		200
To Balance b/d	200		

Commission received Account

To Balance c/d	Rs. 100	By Cash	Rs. 100
	100		100
		By Balance b/d	100

I. Balance Method**Trail balance as on.....**

	Dr.	Cr.
Cash	8,400	
Capital	-	8,000
Furniture	1,000	-
Purchases	10,000	-
Sales	-	12,000
Raja	-	1,500
Somu	2,000	-
Rent	200	-
Commission received		100
	21,600	21600

II. Total Method**Trial balance as on.....**

	Dr. (Rs.)	Cr. (Rs.)
Cash	18,100	9,700
Capital	-	8,000
Furniture	1,000	-
Purchases	10,000	-
Sales	-	12,000
Raja	2,500	4,000
Somu	5,000	3,000
Rent	200	-
Commission received	-	100
	36,800	36,800

Illustration 2

The following Trail balance has been prepared wrongly. You are asked to prepare the Trail balance correctly.

	Dr. Rs.	Cr. Rs.
Capital	22,000	
Stock		10,000
Debtors	8,000	
Creditors		12,000
Machinery		20,000
Cash in hand		2,000
Bank overdraft	14,000	
Sales returns		8,000
Purchases returns	4,000	
Misc. expenses	12,000	
Sales		44,000
Purchases	26,000	
Wages	10,000	
Salaries		12,000
Prepaid insurances		200
Bills payable	10,800	
Outstanding salaries	1,400	
Total	1,08,200	1,08,200

Solution**Corrected Trial Balance as at....**

	Dr. Rs.	Cr. Rs.
Capital		22,000
Stock	10,000	
Debtors	8,000	
Creditors		12,000
Machinery	20,000	

Cash in hand	2,000	
Bank overdraft		14,000
Sales returns	8,000	
Purchases returns		4,000
Misc. expenses	12,000	
Sales		44,000
Purchases	26,000	
Wages	10,000	
Salaries	12,000	
Prepaid insurances	200	
Bills payable		10,800
Outstanding salaries		1,400
Total	1,08,200	1,08,200

Illustration 3

A book-keeper submitted to you the following Trail Balance, which he has not been able to agree. Rewrite the Trial Balance, correcting the mistakes committed by him.

	Dr. Rs.	Cr. Rs.
Capital		15,000
Drawings	3,250	
Stock (1-1-80)	17,445	
Return inwards		554
Carriage inwards	1,240	
Deposit with Anand Gupta		1,375
Return outwards	840	
Carriage outwards		725
Loan to Ashok @ 5% given on 1-1-80		1,000
Interest on the above		25
Rent	820	
Rent outstanding	130	
Stock (31-12-1980)		18,792
Purchases	12,970	
Debtors	4,000	
Goodwill	1,730	
Creditors		3,000
Advertisement expenses	954	
Provision for doubtful debts		1,200
Bad debts	400	
Patents and patterns	500	
Cash	62	
Sales		27,914
Discount allowed		330
Wages	754	
Total	45,095	69,915

Solution**Corrected Trail Balance as at 31st December 1980**

	Dr.	Cr.
	Rs.	Rs.
Capital		15,000
Drawings	3,250	
Stock (1-1-1980)	17,445	
Return inwards	554	
Carriage inwards	1,240	
Deposit with Anand Gupta	1,375	
Return outwards		840
Carriage outwards	725	
Loan to Ashok @ 5% given on 1-1-80	1,000	
Interest on the above		25
Rent	820	
Rent outstanding		130
Purchases	12,970	
Debtors	4,000	
Goodwill	1,730	
Creditors		3,000
Advertisement expenses	954	
Provision for doubtful debts		1,200
Bad debts	400	
Patents and patterns	500	
Cash	62	
Sales		27,914
Discount allowed	330	
Wages	754	
Total	48,109	48,109

Note: Closing stock is an adjustment, so it has not been taken in the Trial balance.

5.8 LET US SUM UP

In business, monetary transaction is prepared on the basis of double entry system. In double entry system, we find two aspects (Debit and Credit) in each and every business transaction. After preparing the ledger account, in order to know the arithmetical accuracy trial balance will be prepared. Ledger accounts balances will be transferred and finally it should be totaled. The debit and credit balances should be equal. If it is equal our accounting is correct. If not, some mistake has been made. With the help of trial balance we can find the arithmetical accuracy of accounts preparation.

5.9 Lesson-End Activities

1. What is Trail Balance?
2. Explain the meaning and objectives of Trail Balance
3. What are the different methods of preparing Trail Balance?
4. What are the errors disclosed by Trail Balance?
5. Name the errors which do not affect the Tail Balance.
6. Draw up a Trail Balance with imaginary figures.

5.10 Check your progress

Your answer may include any five of the following:

1. A trail balance is prepared as on a specified date.
2. It contains a list of all ledger account including cash account.
3. It may be prepared with the balances or totals of Ledger accounts.
4. Total of the debit and credit amount columns of the trail balance must tally.
5. If the debit and credit amounts are equal, we assume that ledger accounts are arithmetically accurate.

5.11 Points for Discussion

1. From the following ledger accounts of Sathiya, draw Trail Balance as on 31st December 2004.

	Rs.		Rs.
House Property	45,000	Repairs	1,200
Furniture	5,000	Rent Received	4,800
Utensils	6,000	Medical Expenses	1,200
Ornaments	25,000	School Free	1,800
Cash	630	Conveyance	1,350
Bank Balance:		Cosmetics	1,150
Fixed Deposits	20,000	Interest Received	3,000
Savings Bank	3,500	House Building Loan from Govt.	20,000
Shares & Govt. Securities	12,000	Interest paid	1,870
Claims against persons	1,500	Municipal Taxes	3,000
Salary (Income)	24,000	Income-tax	2,500
Servants wages	1,200	Accumulated Fund	88,300
Food and Drink	3,750		
Dress and Clothing's	2,450		

2. The following Trail Balance was extracted from the books of a Merchant, although the columns are agreed, yet they are incorrect. You are required to correct and redraft it.

	Dr.		Cr.
Premises	30,000	Capital	36,800
Machinery	8,500	Fixtures	2,800
Bad Debts	1,400	Sales	52,000
Returns Outwards	1,300	Debtors	30,000
Cash	200	Interest Received	1,300
Discount Received	1,500		
Bank Overdraft	5,000		
Creditors	25,000		
Purchases	50,000		
	1,22,900		1,22,900

3. Mr. Blank, a client of your with whom book-keeping is not a strong point, ask you to audit his accounts for the year ended 31st December 2004, upon which data his Closing Stock was values at Rs.574.

As a basis for your audit Blank furnishes you with the following statements:

	Dr.	Cr.
	Rs.	Rs.
Blank Capital	-	1,556
Blank Drawings	564	-
Leasehold Premises	741	-
Sales	-	2,756
Due from Customers	-	530
Purchases	1,268	-
Purchases Return	264	-
Loan form Bank	-	250
Creditors	528	-
Trade Expenses	784	-
Cash at Bank	142	-
Bills Payable	100	-
Salaries & Wages	598	-
Stock (1 st January)	-	264
Rent, Rates, etc.	465	-
Sales Return	-	98
	5,454	5,454

If you do not approve this statement, amend it.

4. The under mentioned balances were extracted from the books of Mahesh as on 31st March 2005. You are asked to prepare a Trail Balance as on that date.

	Rs.
Capital	78,000
Stock 1.4.2004	5,000

Leasehold Premises	46,000
Furniture & Fittings	13,500
Plant & Machinery	35,000
Purchases	78,900
Sales	1,30,620
Discount Received	470
Discount Allowed	540
Carriage Inwards	120
Carriage Outwards	230
Returns Inward	1,500
Returns Outward	380

Wages and Salaries	17,680
Rates and Taxes	1,370
Rent Received	530
Sundry Expenses	1,660
Trade Creditors	22,760
Book Debts	34,000
Drawings	3,000
Bills Payable	1,140
Cash in hand	1,200
Bank Loan	5,800
Closing Stock	3,900

5.12 References

1. Grewal T.B. – Double Entry Book Keeping
2. Jain & Navamy – Advanced Accountancy.

LESSON 6 MANUFACTURING ACCOUNT

Contents:

- 6.0 Aims and objectives**
- 6.1 Introduction**
- 6.2 Meaning of Manufacturing Account**
- 6.3 Purpose of Manufacturing Account**
- 6.4 Various items shown in manufacturing account**
 - 6.4.1 Debit side items
 - 6.4.2 Credit side items
- 6.5 Specimen of manufacturing account**
- 6.6 Illustrations**
- 6.7 Let us Sum Up**
- 6.8 Lesson-End Activities**
- 6.9 Check your Progress**
- 6.10 Points for Discussion**
- 6.11 References**

6.0 AIMS AND OBJECTIVES

- i) To know the purpose of preparing Manufacturing account.
- ii) To identify the items debited and credited in Manufacturing account.
- iii) To understand the method of preparing Manufacturing account.

6.1 INTRODUCTION

'Final Statements' generally refer to two statements prepared by a business concern at the end of every accounting year. They are (1) Income statement and (2) Balance sheet. In case of trading concerns these statements are prepared under the headings 'Trading and profit and loss account' and 'Balance sheet.' In case of manufacturing concerns these statements are titled 'Manufacturing, Trading, and Profit and Loss Account' and 'Balance Sheet.' In case of Limited companies they are called 'Profit and Loss Account', 'Profit and Loss appropriation account' and 'Balance sheet'.

6.2 MEANING OF MANUFACTURING ACCOUNT

Manufacturing concerns which convert raw material into finished product is required to prepare manufacturing account and then prepare trading and profit and loss account. This is necessary because they have to ascertain cost of goods manufactured, gross profit and net profit.

6.3 PURPOSE OF MANUFACTURING ACCOUNT

The main purpose of manufacturing account is to show:

- (i) Cost of goods manufactured; and

- (ii) Major items of costs such as raw material consumed, productive wages, direct and indirect expenses of production.

6.4 VARIOUS ITEMS SHOWN IN MANUFACTURING ACCOUNT

6.4.1 Debit side items

(a) Raw material consumed

Manufacturing account starts with value of raw materials consumed, i.e., opening stock of raw materials plus Purchases and incidental expenses of purchase less closing stock of raw materials.

(b) Direct wages and expenses

Direct wages and direct expenses are debited to manufacturing account. These are the wages and expenses directly identifiable with the output produced.

(c) Indirect factory expenses

Expenses like factory rent, salaries, lighting, power, heat and fuel, machinery repairs, depreciation and other factory expenses are debited to manufacturing account. Total of Raw materials consumed, direct wages, direct expenses and factory expenses is the total manufacturing cost.

(d) Opening work in progress

Work-in-progress is the semi finished output. Opening work-in-progress is shown on the debit side of manufacturing account. The assumption is that it is completed into finished output during the current accounting period.

(e) Sale of Scrap

Scrap can be raw material scrap or indirect material scrap. It may be reduced from material cost on debit side. Alternatively it can be shown on credit side of manufacturing account, like an income.

6.4.2 Credit side

(a) Closing work-in-progress

It represents the semi-finished output at the end of the accounting period and is credited to manufacturing account.

(b) Sale of scrap

If it is direct material scrap, it can be reduced from raw material on debit side. However in the absence of specific details, the amount from sale of scrap can be credited to manufacturing account. In that case, whether it is direct material scrap or indirect factory material scrap makes no difference.

(c) Cost of Finished goods manufactured

This is the balancing figure in the manufacturing account. It is transferred to trading account.

Note: The closing work-in-progress and sale of scrap may also be reduced on debit side and then credit side shows the cost of goods manufactured alone. That approach makes the above account look like a cost sheet prepared in cost A/c.

6.5.SPECIMEN OF MANUFACTURING ACCOUNT IS PRESENTED BELOW

Manufacturing A/c for the year ended.....

		RS.		Rs.
To work-in-progress (opening)		xxx	By Sale of scrap	xxx
To Material used	xxx		By Work-in-progress (closing)	xxx
Opening stock	xxx		By Cost of goods produced transferred to trading A/c (bal. fig)	xxx
Add: Purchases	xxx			
	xxx			
Less: Closing stock	xxx	xxx		
To Wages		xxx		
To Factory expenses		xxx		
To Purchase expenses		xxx		
To Import duty		xxx		
To Carriage inward		xxx		
To Depreciation on machinery		xxx		
To Repairs to Machinery		xxx		
		xxx		xxx

Check your progress 6

List out any three items debited in the manufacturing account

Notes: (a) Write your answer in the space given below.

(b) Check your answer with the ones given at the end of this Lesson (pp. 89).

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6.6 ILLUSTRATIONS

Illustration 1

From the following balances in the ledger of Mr. Kannusamy for the year ended 31-3-2002, prepare manufacturing account.

	Rs.
Opening work-in-progress	1,00,000
Opening stock of raw materials	55,000
Purchases of raw materials	10,00,000
Closing stock of raw materials	40,000
Carriage on purchases	10,000
Factory wages	50,000
Fuel and coal	45,000
Factory power	20,000
Depreciation on plant and machinery	15,000
Factory supervisor's salary	75,000
Closing work-in-progress	20,000

Solution

Manufacturing Account of Mr. Kannusamy for the year ended 31-3-2002

Particulars	Rs.	Rs.	Particulars	Rs.
To opening work-in- progress		1,00,000	By Closing work-in-progress	20,000
To Raw materials used:			By Cost of goods	
Opening stock	55,000		Manufactured,	13,10,000
Add: Purchases			transferred to	
	10,00,000		trading A/c	
	10,55,000		(Bal.fig)	
Less: Closing stock	40,000	10,15,000		
To Carriage on purchase		10,000		
To Factory wages		50,000		
To Fuel and coal		45,000		
To Factory power		20,000		
To Depreciation on plant and machinery		15,000		
To Supervisor's salary		75,000		
		13,30,000		13,30,000

Illustration 2 From the following ledger balance of Mr. Senthil prepares manufacturing account for the year ended 31-3-2001.

	Rs.
Opening stock:	
Raw Materials	20,000
Work-in-progress	15,000
Finished goods	40,000
Purchase of raw materials	4,00,000
Factory expenses :	
Cleaning	500
Power	500
Fuel & coal	1,000
Wages	2,000
Closing stock:	
Raw materials	5,000
Work-in-progress	8,000
Finished stock	12,000
Sales	10,00,000

Solution :

Manufacturing account for the year ended 31-3-2001

Particulars	Rs.	Rs.	Particulars	Rs.
To opening work-in-progress		15,000	By Closing work-in-progress	8,000
To Raw materials used:			By Cost of goods	
Opening stock	20,000		Manufactured,	4,26,000
			transferred to trading	
			A/c (Bal.Fig)	
Add: Purchases	4,00,000			
	4,20,000			
Less: Closing stock	5,000	4,15,000		
To Wages		2,000		
To Factory cleaning		500		
To Factory power		500		
To Fuel & coal		1,000		
		4,34,000		4,34,000

6.7 LET US SUM UP

Manufacturing concerns converting raw materials into finished products. They must know the cost of production for the units produced during a particular period. In order to know the cost of production, they prepare manufacturing account.

6.8 LESSON – END ACTIVITIES

1. Describe to steps involved in to preparation of financial statement of accounts of a firm.
2. Describe the contents of manufacturing account.
3. Explain to various financial statements.
4. What is material consumed?

6.9 Check your progress

Your answer may include five of the following

1. Raw material consumed
2. Direct wages and expenses
3. Indirect factory expenses
4. Opening work in progress
5. Sale of Scrap

6.10 Points for Discussion

1. Following are the ledger balances of M/s.Seetha on 31-12-1999. Prepare her manufacturing account for the year 1999.

	Rs.
Opening stock of raw materials	10,000
Closing stock of raw materials	15,000
Purchase of raw materials	1,50,000
Freight on purchases	500
Wages (Productive)	75,000
Factory cleaning	2,000
Factory rent	4,000
Factory lighting	5,000
Power	20,000
Depreciation: On plant and machinery	15,000
On Factory vehicles	5,000
Factory managers salary	2,000

2. Following are the ledger balances of Mr. Karthik as on 31-3-2000. Prepare manufacturing account for the year ending on that date.

	Rs.
Stock of Materials on 1-4-1999	20,000
Purchase of raw materials	3,00,000
Stock of raw materials on 31-3-2000	10,000
Carriage inwards	1,500
Factory wages	20,000

Fuel and coal	5,000
Factory cleaning	4,000
Factory lighting	2,000
Depreciation: Factory machinery	4,000
Factory building	2,000
Factory watchman's salary	2,000
Stores consumed	200
Opening work-in-progress	5,000
Closing work-in-progress	2,000

6.11 References

1. Grewal T.B. – Double Entry Book Keeping
2. Jain & Navamy – Advanced Accountancy.

LESSON 7 TRADING ACCOUNT

Contents:

7.0 Aims and objectives

7.1 Introduction

7.2 Preparation of Trading Account

7.2.1 Items shown in trading account: (A) Debit side

7.2.1 Items shown in trading account: (B) Credit side

7.3 Closing entries relating to trading account

7.4 Specimen of Trading account

7.5 Illustrations

7.6 Let us Sum Up

7.7 Lesson-End Activities

7.8 Check your Progress

7.9 Points for Discussion

7.10 References

7.0 AIMS AND OBJECTIVES

- (i) To understand the meaning of trading account
- (ii) To know the items shown in trading account Debit side and Credit side
- (iii) To study the Closing entries relating to trading account.

7.1 INTRODUCTION

Trading account is prepared for an accounting period to find the trading results or gross margin of the business i.e., the amount of gross profit the concern has made from buying and selling during the accounting period. The difference between the sales and cost of sales is gross profit. For the purpose of computing cost of sales, value of opening stock of finished goods, purchases, direct expenses on purchasing and manufacturing are added up and closing stock of finished goods is reduced. The balance of this account shows gross profit or loss which is transferred to the profit and loss account.

7.2 PREPARATION OF TRADING ACCOUNT

Trading account is a ledger account. It has to be prepared in conformity with double entry principles of debit and credit.

7.2.1 Items shown in trading account: (A) Debit side

i) **Opening stock:** The stock at the beginning of an accounting period is called opening stock. This is the closing stock as per the last balance sheet. It includes stock of raw materials, work in progress, (where manufacturing account is not separately prepared) and finished goods. Trading account starts with opening stock on the debit side.

ii) Purchases: The total value of goods purchased after deducting purchase returns is debited to trading a/c. Purchases comprise of cash purchases and credit purchases.

iii) Direct expenses: Direct expenses are incurred to make the goods saleable. They include wages, carriage and freight on purchases, import duty, customs duty, clearing and forwarding charges manufacturing expenses or factor. Expenses (where manufacturing account is not separately prepared). All direct expenses are extracted from trial balance.

7.2.2 Items shown in trading account :(B) Credit side:

i) Sales: It includes both credit and cash sales. Sales returns are reduced from sales and net sales are shown on the credit side of trading account. The sales and returns are extracted from the trial balance.

ii) Closing stock: Closing stock is the value of goods remaining at the end of the accounting period. It includes closing stock of raw materials, work progress (where manufacturing account is not separately prepared) and finished stock. The opening stock is ascertained from trial balance but closing stock is not a part of ledger. It is separately valued and given as an adjustment. If it is given in trial balance, it is after adjustment of opening and closing stocks in purchases. If closing stock is given in trial balance it is shown only as current asset in balance sheet. If closing stock is given outside trial balance, it is shown on credit side of trading account and also as current asset in the balance sheet

7.3 CLOSING ENTRIES RELATING TO TRADING ACCOUNT

The Journal entries given below are passed to transfer the relevant ledger account balances to trading account.

(i) For opening stock, purchases and direct expenses.

Trading A/c	Dr	xxx	
To Opening Stock A/c			xxx
To Purchases (Net) A/c			xxx
To Direct expenses A/c			xxx
[Being transfer of trading a/c debit side items]			

(ii) For transfer of sales (after reducing sales returns)

Sales (net) A/c	Dr	xxx	
To Trading A/c			xxx
[Being transfer of sales to Trading A/c]			

(iii) For transferring gross profit

Trading A/c	Dr	xxx	
To Profit & Loss A/c			xxx
[Being transfer of gross profit to P&L A/c]			

(iv) For Gross Loss

Profit & Loss A/c	Dr	xxx	
To Trading A/c			xxx
[Being transfer of gross loss to P&L A/c]			

Note: Closing stock is taken into account by an adjustment journal entry along with other adjustments.

7.4 A SPECIMEN OF TRADING ACCOUNT IS SHOWN BELOW

Trading account for the year ended

Particulars	Rs.	Rs.	Particulars	Rs.	Rs.
To Opening stock		xxx	By Sales	Xxx	
To purchases	xxx		Less: Returns inwards		
			(or)		
			Sales Returns	xxx	
Less: purchase returns	xxx	xxx		-----	xxx
To Direct expenses:					
Wages		xxx	By closing stock		
Fuel & Power		xxx	By Gross loss c/d *		xxx
Carriage inwards		xxx	(transferred to profit		xxx
			and loss A/c)		
Royalty on production		xxx			
Power		xxx			
Coal water, Gas		xxx			
Import duty		xxx			
Consumable stores		xxx			
Factory expenses		xxx			
To Gross profit c/d		xxx			
(transferred to profit and		-----			-----
loss A/c)					

* Balancing figure will be either gross profit or loss in Trading A/c

Check your progress 7

List out closing entries to be passed to transfer relevant ledger balances to trading account.

- Notes: (a) Write your answer in the space given below.
 (b) Check your answer with the ones given at the end of this Lesson (pp. 98).

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7.5 ILLUSTRATIONS

Illustration 1

Prepare trading account of Sivika for the year ending 31-3-2001.

	Rs.
Opening stock	4,00,000
Purchases	43,00,000
Carriage inward	2,60,000
Wages	1,20,000
Credit sales	72,00,000
Cash sales	18,00,000
Sales returns	15,80,000
Purchase returns	50,000
Closing stock	5,00,000

Solution:

Trading account of Sivika for the year ending 31-3-2001

Particulars	Rs.	Rs.	Particulars	Rs.	Rs.
To Opening Stock		4,00,000	By Sales;		
To purchase	43,00,000		Cash sales	18,00,000	
Less: Purchase returns	50,000		Credit sales	72,00,000	
		42,50,000			
To wages		1,20,000	Less: Sales returns	90,00,000	
To carriage inward		2,60,000		15,80,000	74,20,000
To gross profit		28,90,000	By Closing stock		5,00,000
		79,20,000			79,20,000

Illustration-2

Prepare Trading Account of Lakshmi for the year ending 31-12-96 from the following information:

	Rs.
Opening Stock	80,000
Purchases	8,60,000
Freight Inward	52,000
Wages	24,000
Sales	14,40,000
Purchase Returns	10,000
Sales Returns	3,16,000
Closing Stock	1,00,000
Import duty	30,000

Solution :

Trading Account of Lakshmi for the year ending 31-12-1996

Particulars	Rs.	Rs.	Particulars	Rs.	Rs.
To Opening Stock		80,000	By Sales;	14,40,000	
To purchase	8,60,000		Less: Sales returns	3,16,000	11,24,000
Less: Purchase returns	10,000	8,50,000	By Closing Stock		1,00,000
To Freight Inward		52,000			
To Wages		24,000			
To Import duty		30,000			
To Gross Profit c/d		1,88,000			
		12,24,000			12,24,000

Illustration -3

The following are the balances in the Ledger of Mr. Suresh for the year ended 31st March 1996.

Opening Stock:	Rs.
Raw materials	20,000
Work-in-progress	3,000
Finished goods	10,800
Purchase of raw materials	50,000
Sales	2,40,000
Fuel and coal	1,000
Wages	32,000
Factory	40,000

Office expenses	30,000
Depreciation on Plant & Machinery	3,00
Closing stock:	
Raw materials	20,000
Work-in-progress	4,000
Finished goods	8,000

Prepare manufacturing and Trading Account for the year ended 31 March 1996.

Solution:

Manufacturing Trading Account of Mr. Suresh for the year ending 31.3.96

Particulars	Rs.	Rs.	Particulars	Rs.
To Opening work-in-progress		3,000	By Closing work-in-progress	4,000
To Cost of Materials consumed:			By cost of goods Manufactured transferred to Trading A/c	1,25,000
Opening	20,000			
Add: Purchases	50,000			
	70,000			
Less: Closing Stock	20,000			
		50,000		
To Wages		32,000		
To Fuel & Coal		1,000		
To Factory expenses		40,000		
To Depreciation on plant & Machinery		3,000		
		1,29,000		1,29,000
To Opening Stock of finished goods		10,800	BY Sales	2,40,000
To Cost of goods manufacture		1,25,000	By Closing Stock of finished goods	8,000
To Gross Profit c/d		1,12,200		
		2,48,000		2,48,000

7.6 LET US SUM UP

At the end of the year, trading account is prepared to know the trading results. Trade expenses like wages, carriage inward are considered. Cost of goods sold is compared with sales in order to know gross profit / gross loss.

7.7 LESSON – END ACTIVITIES

1. What is trading account? Why it is prepared?
2. Distinguish between trading and manufacturing account?

7.8 Check your progress answer

Your answer may include the following :

- (i) For opening stock, purchases and direct expenses.

Trading A/c	Dr	xxx	
To Opening Stock A/c			xxx
To Purchases (Net) A/c			xxx
To Direct expenses A/c			xxx

[Being transfer of trading a/c debit side items]

- (ii) For transfer of sales (after reducing sales returns)

Sales (net) A/c	Dr	xxx	
To Trading A/c			xxx

[Being transfer of sales to Trading A/c]

- (iii) For transferring gross profit

Trading A/c	Dr	xxx	
To Profit & Loss A/c			xxx

[Being transfer of gross profit to P&L A/c]

- (iv) For Gross Loss

Profit & Loss A/c	Dr	xxx	
To Trading A/c			xxx

[Being transfer of gross loss to P&L A/c]

7.9 Points for Discussion

1. From the under mentioned balances obtained at the end of 31-March 1999, prepare Trading account.

	RS.
Stock of goods on 1-4-98	12,50,000
Stock of goods on 31-3-99	23,75,000
Purchases – Cash	18,50,000
- Credit	41,25,000
Sales – Cash	25,50,000
-Credit	57,50,000
Returns to suppliers	25,000
Returns by customers	30,000
Duty and clearing charges	50,000

2. Prepare trading and manufacturing account of M/s Senthil & Bros from their ledger balances as on 31-3-2000.

	RS.
Stock as on 1-4-99.	
Raw materials	10,000
Work-in-progress	5,000
Finished goods	30,000
Purchase of Raw materials	2,00,000
Purchase returns	10,000
Sales of finished goods	5,00,000
Factory lighting	5,000
Power	6,000
Coal & Fuel	4,000
Wages	50,000
Depreciation of plant & Machinery	1,000
Stock as on 31-3-2000	
Raw materials	5,000
Work-in-progress	10,000
Finished goods	50,000

7.10 References

1. Jain & Narang – Advanced Accountancy.
2. Gupta R.L. – Advanced Accountancy.

LESSON 8 PROFIT AND LOSS ACCOUNT

Contents:

- 8.0 Aims and objectives**
- 8.1 Introduction**
- 8.2 Definition**
- 8.3 Preparation of profit and loss account**
 - 8.3.1 Debit side
 - 8.3.2 Credit side
- 8.4 Closing entries for profit and loss account**
- 8.5 Specimen of profit and loss account**
- 8.6 Principles of preparing profit of loss Account**
- 8.6 Illustrations**
- 8.7 Let us Sum Up**
- 8.8 Lesson-End Activities**
- 8.9 Check your Progress**
- 8.10 Points for Discussion**
- 8.11 References**

8.0 AIMS AND OBJECTIVES

- i) To study the definition of profit and loss account.
- ii) To learn how to prepare the profit and loss account.
- iii) To understand the Principles of preparing profit of loss Account

8.1 INTRODUCTIONS

Profit and loss account is prepared to ascertain the net profit of the business concern for an accounting period

8.2 DEFINITION

In the words of Prof. Carter “Profit and loss account is an account into which all gains and losses are collected in order to ascertain the excess of gains over the losses or vice versa.”

8.3 PREPARATION OF PROFIT AND LOSS ACCOUNT

Profit and loss account starts with gross profit brought down from trading account on the credit side. (If gross loss, on the debit side). All the indirect expenses are debited and all the revenue incomes are credited to the profit and loss account and then net profit or loss is calculated. If incomes or credit is more, than the expenses or debit, the difference is net profit. On the other hand if the expenses or debit side is more, the difference is net loss.

8.3.1 Debit side:

Expenses shown on the debit side of profit and loss account are classified into two categories

1. Operating expenses and
2. Non operating expenses

(1) Operating expenses: These expenses are incurred to operate the business efficiently. They are incurred in running the organisation. Operating expenses include administration, selling, distribution, finance, depreciation and maintenance expenses.

(2) Non operating expenses: These expenses are not directly associate with day today operations of the business concern. They include loss on sale of assets, extraordinary losses, etc.

8.3.2 Credit side

Gross profit is the first item appearing on the credit side of profit and loss account. Other revenue incomes also appear on the credit side of profit and to account. The other incomes are classified as operating incomes and non operating incomes.

(1) Operating incomes: These incomes are incidental to business and earned from usual business carried on by the concern. Examples: discount received, commission earned, interest received etc.

(2) Non operating incomes: These incomes are not related to the business carried on by the firm. Examples are profit on sale of fixed assets, refund of tax etc.

8.4 CLOSING ENTRIES FOR PROFIT AND LOSS ACCOUNT

1. For transferring expenses to profit and loss account:

Profit and Loss A/c	Dr	xxx	
To expenses A/c			xxx
[Being transfer of all P&L A/c debit side items]			

2. For transfer of incomes to profit and loss account

Incomes A/c	Dr	xxx	
To Profit and Loss A/c			xxx
[Being transfer of Incomes to P&L A/c]			

3. For net profit:

P&L A/c	Dr	xxx	
To Capital A/			xxx
[Being net profit credited to capital]			

4. For transfer of Net Loss

Capital A/c	Dr	xxx	
To P&L A/c			xxx
[Being net loss transferred to capital]			

Note: In case of partnership, the profit or loss is divided between partners in their profit sharing ratio and credited or debited to the individual partners. In case of limited companies, Net profit or loss is transferred to the P&L Appropriation A/c for disposal.

8.5 THE SPECIMEN OF PROFIT AND LOSS ACCOUNT IS SHOWN BELOW Profit and Loss Account

For the year ended 31st March 2001

Particulars	Rs.	Particulars	Rs.
To Gross loss b/d	xxx	By Gross profit b/d	xxx
To Administration expenses		By Dividends received	xxx
Salaries	xxx	By Interest received	xxx
Rent rates & taxes	xxx	By Discount received	xxx
Printing & Stationery	xxx	By commission received	xxx
Postage and Telegrams	xxx	By Rent received	xxx
Telephone expenses	xxx	By Profit on sale of assets	xxx
Legal charges	xxx	By Sundry revenue receipts	xxx
Insurance	xxx	By Net loss transferred to capital A/c (Bal. Fig)*	xxx
Audit fees	xxx		
Directors fees	xxx		
General expenses	xxx		
To Selling & Distribution Expenses			
Showroom expenses	xxx		
Advertising	xxx		
Commission paid to salesmen	xxx		
Bad debts	xxx		
Provision for doubtful debts	xxx		
Godown rent	xxx		
Carriage outward	xxx		
Upkeep of delivery vans	xxx		
To Depreciation and maintenance			
Depreciation	xxx		

Repairs	xxx		
To Financial expenses			
Interest ob borrowings	xxx		
Discount allowed	xxx		
To abnormal losses			
Loss on sale of assets	xxx		
To Net profit transferred to capital A/c (bal.fig)	xxx		
	xxx		xxx

Note: *Either net profit or net loss is the balancing figure in P & L A/c

The purpose and importance of preparing profit and loss account.

To determine the future line of action

To know the net profit or loss of business

To calculate different ratios

To compare the actual performance of the business with the desired one.

8.6 PRINCIPLES OF PREPARING PROFIT OF LOSS ACCOUNT

1. Only revenue receipts should be entered
2. Only revenue expenses together with losses should be taken into account.
3. Expenses and incomes relating only to the period for which the accounts are being prepared should be considered.
4. All expenses and income relating to the period concerned should be considered even if the expense has not yet been paid in cash or the income has not yet been received in cash.
5. All personal expenses of the proprietor and partners must be debited to the capital or drawings accounts and must not be debited to the profit and loss account. Similarly any income has been earned from the private assets of the proprietor which is received by firm, it must be credited to the capital or drawings account.

8.6 ILLUSTRATIONS

Illustration - 1

From the following Trial balance of Mr.Gandhi prepare profit and loss account for the year ended 31-3-2001.

	Debit	Credit
	Rs.	Rs.
Gross Profit		9,50,000
Commission received		5,000
Interest received		4,000
Sundry income		7,000
Depreciation	10,000	
Salaries	15,000	
Discount (Dr)	8,000	
Discount (Cr)		12,000
Bank charges	4,000	
Audit fees	2,000	
Stationery	400	

Solution

Profit and Loss Account of Mr.Gandhi for the year ended 31-3-2001

Particulars	Rs.	Particulars	Rs.
To Depreciation	10,000	By Gross profit b/d	9,50,000
To Salaries	15,000	By Commission received	5,000
To Discount	8,000	By Interest received	4,000
To Bank charges	4,000	By Sundry income	7,000
To Audit fees	2,000	By Discount	12,000
To Stationery	400		
To Net profit c/d	9,38,600		
	9,78,000		9,78,000

Check your progress 8

When you prepare profit and loss account what are the principles to be followed.

Notes: (a) Write your answer in the space given below.

(b) Check your answer with the ones given at the end of this Lesson (pp. 108).

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Illustration – 2

From the following balance given below, prepare P&L A/c of M/s. Diviya Ltd. for the year ending 31.12.2003.

	Rs.		Rs.
Salary & wages	8,000	Discount allowed	7,000
Interest paid	5,000	Interest received	4,000
Commission received	11,000	Traveling	5,000
Commission paid	6,000	Bad debts	1,500
Advertisement	5,000	Depreciation	10,000
Printing & Stationery	11,500	Other office expenses	1,200
Postage & telegram	7,500	Sundry income	15,000
Rent & rates	1,500	Prov. For doubtful debts	2,000
Medical fees	3,000	G.P. for the year	1,25,000

Solution:**Profit & Loss of M/s Diviya Ltd. for the year ending 31.12.2003**

	Rs.		Rs.
To Salary & wages	8,000	By Gross profit b/d	1,25,000
To Interest paid	5,000	By Commission	11,000
To Commission	6,000	By Interest	4,000

To Advertisement	5,000	By Sundry income	15,000
To Discount	7,000	By Prov. for doubtful debts	2,000
To Traveling expenses	5,000		
To Bad debts	1,500		
To Depreciation	10,000		
To Printing & Stationery	11,500		
To Postage & rates	7,500		
To Rent & rates	1,500		
To Medical fees	3,000		
To Other office expenses	1,200		
To Net profit	84,800		
	1,57,000		1,57,000

Illustration 3

From the following balance extracted at the close of the year ended 31 Dec. 1996. Prepare Profit and Loss account of Mr.Santha Kumar as at that date:

	Rs.		Rs.
Gross profit	55,000	Repairs	500
Carriage on sales	500	Telephone expenses	520
Office Rent	500	Interest (Dr.)	480
General expenses	900	Fire insurance premium	900
Discount to customers	360	Bad debts	2,100
Interest from Bank	200	Apprentice Premium (Cr.)	1,500
Traveling expenses	700	Printing & Stationary	2,500
Salaries	900	Trade expenses	300
Commission	300		

Solution**Profit & Loss Account of Mr. Santha Kumar for the year ending 31-12-1996**

	Rs.		Rs.
To Carriage on Sales	500	By Gross profit b/d	55,000
To Office Rent	500	By Bank Interest	200
To General	900	By Apprentice Premium	1,500
To Discount to customers	360		
To Traveling expenses	700		
To Salaries	900		
To Commission	300		
To Repairs	500		
To Telephone expenses	520		
To Interest paid	480		
To Fire Insurance Premium	900		
To Bad debts	2,100		
To Printing & Stationery	2,500		
To Trade expenses	300		
To Net Profit transferred to Capital A/c	45,240		
	56,700		56,700

8.7 LET US SUM UP

Net results of an organisation can be know by preparing profit and loss account. All the revenue expenses related to the year whatever it is paid or not and all revenue income related to the current year, whatever it is received are not must be take into consideration in order to know the exact net result.

8.8 POINTS FOR DISCUSSION

1. What is profit and loss account? What purpose does it serve?
2. Distinguish between balance sheet and trial balance?
3. What is Profit and Loss account? What purpose does it serve?
4. The following are the balance extracted from the Books of Mr.Mano.
Prepare Profit and Loss Account for the year ending 31-3-2007.

	Rs.		Rs.
Gross profit	50,000	Commission earned	200
Stationery	150	Taxes	300
Rent	1,300	Printing charges	750
Repairs	250	Interest on loan	450

General expenses	1,750	Office lighting	110
Salaries	11,200	Postage expenses	350
Discount allowed	800	Insurance	400
Travelling expenses	1,000	Discount received	600
		Advertisement	900

5. From the following balance, ascertained from the books of M/r.Senthil and Bros. Prepare profit and Loss account.

	Rs.	Rs.
Gross Profit		75,00
Carriage outwards	2,000	
Interest received		4,000
Salaries	5,000	
Depreciation	7,000	
Audit fees	3,000	
Discount (Cr)		8,000
Discount (Dr)	6,000	
Insurance	2,000	
General expenses	10,000	
Advertisement	12,000	

8.9 Check your progress answer

Your answer may include the following

1. Only revenue receipts should be entered
2. Only revenue expenses together with losses should be taken into account.
3. Expenses and incomes relating only to the period for which the accounts are being prepared should be considered.
4. All expenses and income relating to the period concerned should be considered even if the expense has not yet been paid in cash or the income has not yet been received in cash.

8.10 Points for Discussion

1. Explain the principles to be followed for preparatory the Profit & Losses A/c.
2. What are the closing entries for Profit & Loss A/c.

8.11 References

1. Gupta R.L. – Advanced Accountancy
2. Gupta & Rhasamy – Advanced Accountancy.

LESSON 9 BALANCE SHEET

Contents:

- 9.1 Aims and objectives**
- 9.2 Introduction**
- 9.3 Title**
- 9.4 Definitions of Balance sheet**
- 9.5 Classification of assets and liabilities**
 - 9.5.1 Assets
 - 9.5.2 Liabilities
- 9.6 Performa of Balance Sheet**
- 9.7 Illustrations**
- 9.8 Adjustments**
- 9.9 Preparation of Final Accounts**
- 9.10 Let us Sum Up**
- 9.11 Lesson-End Activities**
- 9.12 Check your Progress**
- 9.13 Points for Discussion**
- 9.14 References**

9.1 AIMS AND OBJECTIVES

- i) To study the meaning and definition of Balance sheet
- ii) To study the Classification of assets and liabilities
- iii) To know the adjustment of Balance sheet
- iv) To learn how to prepare the Balance sheet

9.2 INTRODUCTION

The Balance sheet comprises of lists of assets, liabilities and capital fund on a given date. It presents the financial position of a concern as revealed by the accounting records. It reflects the assets owned by the concern and the sources of funds used in the acquisition of those assets. In simple language it is prepared in such a way that true financial position is revealed in a form easily readable and more rapidly understood than would be possible from a view of the detailed information contained in the accounting records prepared during the currency of the accounting period. Balance sheet may be called a 'statement of equality' in which equality is established by representing values of assets on one side and values of liabilities and owners' funds on the other side.

9.3 TITLE

A Balance sheet is called by different names probably due to lack of uniformity in accounting systems. Generally, the following titles are used in respect of balance sheet:

- (i) Balance sheet or General Balance sheet;
- (ii) Statement of Financial position or condition;
- (iii) Statement of assets and liabilities;
- (iv) Statement of assets and liabilities and owners' fund etc.

Of the above, the title 'Balance sheet' is mostly used. The use of this title implies that data presented in it have been taken from the balances of accounts,

9.4 DEFINITIONS OF BALANCE SHEET:

“Balance sheet is a ‘Classified summary’ of the ledger balances remaining after closing all revenue items into the profit and loss account.” - Cropper.

“Balance sheet is a screen picture of the financial position of a going business concern at a certain moment” - Francis.

9.5 CLASSIFICATION OF ASSETS AND LIABILITIES

A clear and correct understanding of the basic divisions of the assets and liabilities and the meanings which they signify and the amounts which they represent is very essential for a proper perspective of financial position of a business concern. Assets and liabilities are classified under the following major headings.

9.5.1 Assets:

Assets are properties of business. They are classified on the basis of their nature. Different types of assets are as under:

(i) Fixed assets: Fixed assets are the assets which are acquired and held permanently and used in the business with the objective of making profits. Land and building, Plant and machinery, Furniture and Fixtures are examples of fixed assets.

(ii) Current assets: The assets of the business in the form of cash, debtors bank balances, bill receivable and stock are called current assets as they can be realised within an operating cycle of one year to discharge liabilities.

(iii) Tangible assets: Tangible assets have definite physical shape or identity and existence; they can be seen, felt and have volume such as land, cash, stock etc. Thus tangible assets can be both fixed assets and current assets.

(iv) Intangible assets: The assets which have no physical shape which cannot be seen or felt but have value are called intangible assets. Goodwill, patents, trade marks and licences are examples of intangible assets. They are usually classified under fixed assets.

(v) Fictitious assets: Fictitious assets are not real assets. Past accumulated losses or expenses which are capitalised for the time being, expenses for promotion of

organisations (preliminary expenses), discount on issue of shares, debit balance of profit and loss account etc. are the examples of fictitious assets.

(vi) Wasting assets: These assets are also called depleting assets. Assets such as mines, Timber forests, quarries etc. which become exhausted in value by way of excavation of the minerals, cutting of wood etc. are known as wasting assets. Such assets are usually natural resources with physical limitations.

(vii) Contingent assets: Contingent assets are assets, the existence, value possession of which is based on happening or otherwise of specific events. For example, if a business firm has filed a suit for a particular property now in possession of other persons, the firm will get the property if the suit is decided in its favour. Till the suit is decided, it is a contingent asset.

9.5.2 Liabilities

A liability is an amount which a business firm is 'liable to pay' legally. All the amounts which are claims by outsiders on the assets of the business are known as liabilities. They are credit balances in the ledger. Liabilities are classified into two categories as given below.

(1) Owner's capital: Capital is the amount contributed by the owners of the business. In addition to initial capital introduced, proprietors may introduce additional capital and withdraw some amounts from business over a period of time. Owner's capital is also called 'net worth'. Net worth is the total fund of proprietors on a particular date. It consists of capital, profits and interest on capital subject to reduction of drawings and interest on drawings.

In case of limited companies, capital refers to capital subscribed by shareholders. Net worth refers to paid up equity capital plus reserves and profits, minus losses.

(2) Long term Liabilities: Liabilities repayable after specific duration of long period of time are called long term liabilities. They do not become due for payment in the ordinary 'operating cycle' of business or within a short period of time. Examples are long term loans and debentures. Long term liabilities may be secured or unsecured, though usually they are secured.

(3) Current liabilities: Liabilities which are repayable during the operating cycle of business, usually within a year, are called short term liabilities or current liabilities. They are paid out of current assets or by the creation of other current liabilities. Examples of current liabilities are trade creditors, bills payable, outstanding expenses, bank overdraft, taxes payable and dividends payable.

(4) Contingent liabilities: Contingent liabilities will result into liabilities only if certain events happen. Examples are:

Bills discounted and endorsed which may be dishonoured, unpaid calls on investments.

9.6 PRFORMA OF BALANCE SHEET

Balance Sheet as on

Liabilities		Rs.	Assets	Rs.
Capital	xxx		Fixed assets	xxx
Add: Net profit	xxx		Goodwill	xxx
Add: Interest on capital	xxx		Land & Buildings	xxx
	-----		Loose tools	xxx
Less: Drawing	xxx		Furniture & fixtures	xxx
Less: Int. on drawings	xxx		Vehicles	xxx
Less: Loss if any	xxx		Patents	xxx
	-----	xxx	Trade marks	xxx
Long term liabilities			Long term loans (advances)	xxx
Loan on mortgage		xxx	Investments	
			Current assets	
Bank loan		xxx	Closing stock	xxx
Current liabilities			Sundry debtors	xxx
Sundry creditors		xxx	Bills receivable	xxx
Bills payable		xxx	Prepaid expenses	xxx
Bank overdraft		xxx	Accrued incomes	xxx
Creditors for outstanding exp.		xxx	Cash at bank	xxx
Income received in advance		xxx	Cash in hand	xxx
			Fictitious assets	
			Preliminary expenses	xxx
			Advertisement expenses	xxx
			Underwriting commission	xxx
			Discount on issue of shares	xxx
			Discount on issue of debentures	xxx
	xxx			xxx

Check your progress 9

List out any five classification of assets

Notes: (a) Write your answer in the space given below.

(b) Check your answer with the ones given at the end of this Lesson (pp. 142).

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9.7 ILLUSTRATIONS

Illustration 1

From the following adjustment Trial Balance, Prepare Balance Sheet of Saravanan Traders as at 31st December 2004.

Trial balance

	Dr. (Rs.)	Cr. (Rs.)
Capital	-	2,50,000
Cash in hand	40,000	-
Cash at bank	30,000	-
Closing stock	20,000	-
Fixed assets less depreciation (Rs.20,000)	1,80,000	-
Bills payable	21,000	-
Sundry debtors	-	2,000
Sundry creditors	52,000	-
Liabilities for expenses	-	25,000
Drawings	-	10,000
Investments	12,000	-
P&L A/c	15,000	-
Bank overdraft	-	70,000
	-	13,000
	3,70,000	3,70,000

Solution

Saravanan Traders
Balance Sheet as on 31st December 2004

Liabilities		Rs.	Assets		Rs.
Capital	2,50,000		Fixed assets	2,00,000	
Add : Net profit	70,000		Less: Depn.	20,000	
Less: Drawings	3,20,000		Investments		1,80,000
	12,000		Closing stock		15,000
		3,08,000	Sundry debtors		20,000
Bills payable		2,000	Bills receivable		52,000
Sundry creditors		25,000	Cash at bank		21,000
Liabilities for expenses		10,000	Cash in hand		30,000
Bank overdraft		13,000			40,000
		3,58,000			3,58,000

Illustrations 2

The reserve for doubtful debts account showed a credit balance of Rs.1,500 on 1.1.90. During 1990, bad debts amounted to Rs.1,100. The debtors on 31.12.90 owed Rs.40,000. Maintain a 5% reserve for doubtful debts. During 1991, bad debts came to Rs.800. On 31.12.91 the debtors owed Rs.44,000. The bad debts in 1992 amounted to Rs.400. On 31.12.92, the debtors owed Rs.32,000. The same 5% reserve for doubtful debts is maintained in all the years. Pass necessary journals and ledger accounts.

Solution**Journal Entries**

Date	Particulars		Rs.	Rs.
1990	Bad debts A/c	Dr.	1,100	
Dec.31	To Sundry debtors A/c			1,100
	[Being bad debts written off]			
"	Prov. For doubtful debts A/c	Dr.	1,100	
	To Bad debts A/c			1,100
	[Being bad debts transferred]			
"	Profit & Loss A/c	Dr.	1,600	
	To Provision for doubtful debts A/c			1,600
	[Being amount transferred to P&L A/c]			
1991	Bad debts A/c	Dr.	800	

Dec.31	To Sundry debtors A/c [Being bad debts written off]			800
”	Prov. for doubtful debts A/c To Bad debts A/c [Being bad debts transferred]	Dr.	800	800
”	Profit & Loss A/c To Provision for doubtful debts A/c [Being amount transferred to P & L A/c]	Dr.	1,000	1,000
1992	Bad debts A/c	Dr.	400	
Dec.31	To Sundry debtors A/c [Being bad debts written off]			400
”	Prov. for doubtful debts A/c To Bad debts A/c [Being bad debts A/c]	Dr.	400	400
”	Prov. for doubtful debts A/c To Profit & Loss A/c [Being excess reserve credited to P&L A/c]	Dr.	300	300

Bad debts A/c

	Rs.		Rs.
1990 Dec.31 To Sundry Debtors	1,100	1990 Dec.31 By Prov. for doubtful debts	1,100
1991 Dec.31 To Sundry Debtors	800	1991 Dec.31 By Prov. for doubtful debts	800
1992 Dec.31 To Sundry Debtors	400	1992 Jan 1 Balance b/d	400

Provision for doubtful debts A/c

	Rs.		Rs.
1990 To Bad debts	1,100	1990 By Balance b/d	1,500
Dec.31 To Balance c/d	2,000	Dec.31 By P&L A/c	1,600
	3,100		3,100
1991		1991	
Dec.31 To Bad debts	800	Jan.31 By Balance b/d	2,000
To Balance c/d	2,200	By P&L A/c	1,000
	3,000		3,000
1992		1992	
Dec.31 To Bad debts	400	Jan 1 Balance b/d	2,200
To P&L A/c	300		
To Balance c/d	1,500		
	2,200		2,200

Illustration -3

The sundry debtors of a firm on 1st December 1987 were Rs.40,000. On that date it was decided to create a provision for discount at 2% on debtors. During 1988 the actual amount of discount allowed was Rs.400. The debtors on 31st December 1988 were Rs30,000 and it is again decided to create a provision for discount on debtors at 2%. Show the journal entries, discount A/c and provision for discount A/c for both the year.

Solution**Journal Entries**

Date	Particulars		Rs.	Rs.
1987	Profit & loss	Dr.	800	
Dec.31	To Res. For discount on debtors A/c [Being 2% reserve created on Rs.40,000]			800
1988	Discount A/c	Dr.	400	
Dec.31	To Sundry debtors A/c [Being the discount allowed to debtors]			400
"	Reserve for discount on debtors A/c	Dr.	400	
	To Discount A/c [Being the transfer made]			400
"	Profit & Loss A/c	Dr.	200	
	To Res. For discount on debtors A/c [Being the provision created]			200

Reserve for discount on debtors A/c

		Rs.			Rs.
1987			1987		
Dec. 31	To Balance c/d	800	Dec.31	By P&L A/c	800
		800			800
1998			1988		
Dec.31	To Discount	400	Jan 1	By Balance b/d	800
"	To Balance c/d	600	Dec.31	By P&L A/c	200
		1,000			1,000

Discount A/c

		Rs.		Rs.	
1998			1988		
Dec.31	To Sundry Debtors	400	Dec.31	By Res. For doubtful debts	400
		400			400

Illustration – 4

A firm maintains a reserve for discount on creditors at 2%. The balance of reserve for discount on creditors stood at Rs.300 on 1st January 1987. Total creditors at the end of 1987 and 1988 were Rs.10,000 and Rs 9,000 respectively. Discount received during each of the years amounted to Rs.250 and Rs.100 respectively. Write up the reserve a/c for the two years.

Solution**Reserve for discount on creditors A/c**

	Rs.		Rs.
1987			
Jan.1 To Balance b/d	300	Dec.31 By Discount received	250
Dec.31 To P&L A/c	150	Dec.31 By Balance c/d	200
	450		450
1988		1988	
Jan.1 To Balance b/d	200	Jan 1 By Discount received	100
Dec.31 To P&L A/c	80	Dec.31 By Balance c/d	180
	280		280

Illustration -5

From the following adjusted Trial Balance, prepared after Trading and Profit & Loss Accounts are drafted, prepare Balance Sheet of Ramagopalan as at 31st December 1996. Under.

(a) Permanency order and (b) Liquidity order.

	Dr. Rs.	Cr. Rs.
Capital	-	1,00,000
Closing Stock	40,000	-
Fixed Assets less depreciation Rs.16,000	72,000	-
Sundry Debtors	1,00,000	-
Provision for Bad debts	-	5,000
Profit & Loss Account	-	42,000
Sundry Creditors	-	80,000
Liabilities for expenses	-	11,000
Drawings	6,000	
Cash & Bank	20,000	
	2,38,000	2,38,000

Solution

(a) Permanency Order:-

Balance Sheet of Ramagopalan as on 31-12-96

Liabilities		Rs.	Assets		Rs.
Capital opening bal.	1,00,000		Fixed Assets	88,00	
Add: Net Profit	42,000		Less: Depreciation	16,000	
	1,42,000		Stock		
Less: Drawing	6,000	1,36,00	Debtors	1,00,000	
Sundry Creditors		80,000	Less: Provision for Bad debts	5,000	95,000
Liabilities for expenses		11,000	Cash & Bank		20,000
		2,27,000			2,27,000

(b) Liquidity Order:**Balance Sheet of Ramagopalan as on 31-12-96**

Liabilities		Rs.	Assets		Rs.
Liabilities for expenses		11,000	Cash & Bank		20,000
Sundry Creditors		80,000	Debtors	1,00,000	
Capital A/c			Less: Provision for Bad debts	5,000	95,000
Opening Balance:	1,00,000		Stock		40,000
Add: Net Profit	42,000		Fixed Assets	88,000	
	1,42,000		Less: Depreciation	16,000	72,000
Less: Drawings	6,000	1,36,000			
		2,27,000			2,27,000

9.8 ADJUSTMENTS

On preparing Trading and profit and Loss Account, adjustments re necessary when accrual basis of accounting is followed. The following are the items for which adjustments are usually required.

1. Closing Stock

This is the stock which remained unsold in the preceding accounting period.

Closing stock A/c Dr.

To Trading A/c

Trading A/c

	By Closing stock
--	-------------------------

Balance Sheet

	Closing stock
--	----------------------

2. Outstanding Expenses

Outstanding expenses refer to those expenses which have become due during the accounting period for which the final accounts have been preared, but have not yet been paid.

Expenses A/c Dr

To Outstanding expenses A/c

Trading A/c

To Wages (+) O/s wages	
---------------------------	--

Balance Sheet

O/S wages	
-----------	--

P & L A/c

To Salary	
(+) O/s wages	

Balance Sheet

O/S wages	
-----------	--

3. Prepaid Expenses

Prepaid expenses are the expenses the benefit of which has not been fully enjoyed before the end of the accounting year. They are expenses paid in advance or unexpired expenses.

Prepaid expense A/c Dr**To Expenses A/c****P & L A/c**

To Insurance	
(-) Prepaid Ins.	

Balance Sheet

	Prepaid insurance
--	-------------------

4. Income Earned but not received (Outstanding or accrued income)

It may often happen that certain items of income such as interest on investments, commission etc. are earned during the current accounting year, but have not been actually received by the end of the same year. Such incomes are known as outstanding or accrued incomes.

Accrued Income A/c Dr**To Income A/c****P&L A/c**

	By interest
	(+) Accrued int.

Balance Sheet

	Accrued interest
--	------------------

5. Income received in advance

Sometimes a portion of income received during the current year relate to the future period. Such portion of the income which belong to the next accounting period is income received in advance and is known as unexpired income.

Income A/c Dr**To Income received in advance A/c****P & L A/c**

	By Rent received
	(-) Received in advance

Balance Sheet

Rent received in advance	
--------------------------	--

6. Depreciation

Depreciation is the decreased in the value of an asset due to wear and tear, passage of time, obsolescence etc. It is a business expenses, though it is not paid in cash every year. It is to be debited to profit and loss account and the amount be deducted from the relevant asset in the Balance Sheet.

If depreciation is given in the Trial Balance, it is taken only on the debit side of Profit and Loss Account as its adjustment is over.

Depreciation A/c Dr.

To Concerned Assets A/c

P&L A/c	
To Dep. On machinery	

Balance Sheet	
	Machinery (-) Depreciation

7. Bad Debts

Any irrecoverable portion of sundry debtors is termed as bad debt. Bad debt is a loss to the business. If is given in the Trial Balance, it should be shown on the debit side of Profit and Loss Account. Bad debts given in the adjustment is to be deducted from sundry debtors in the Balance Sheet and the same is debited to the Profit and Loss Account.

Bad debts A/c Dr.

To Sundry Debtors A/c

P&L A/c	
To Bad debts	

Balance Sheet	
	Debtors (-) Bad debts

8. Provision for doubtful debts

It is a provision created to meet any loss, if the debtors fail to pay the whole or part of the debt owed by them. The amount required for doubtful debt is kept by changing the amount to the profit and loss account.

Profit and Loss A/c Dr

To Provision for doubtful debts A/c

P&L A/c	
To Provision for doubtful debts	

Balance Sheet	
	Debtors (-) Bad debts (-) Provision for double debts

9. Provision for discount on debtors

Sometimes the goods are sold on credit to customers in one accounting period whereas the payment of the same is received in the next accounting period and discount is to be allowed.

Profit and Loss A/c Dr.

To Provision for discount on debtors A/c

P&L A/c		Balance Sheet	
To Provision for discount on debtors			Debtors (-) Bad debts (-) Provision for double debts (-) Discount on debtors

10. Reserve for discount on creditors

Prompt payment, if made, enables a business man to receive discount. So on last day of accounting period if some amount is still payable to creditors, a provision should be created for such probable income and the amount should be credited to the profit and loss account of that year in which purchases are made.

Reserve for discount on creditors A/c Dr.

To Profit and Loss A/c

P & L A/c		Balance Sheet	
	By Provision for discount creditors	Creditors (-) Provision for discount on creditors	

11. Interest on capital

Sometimes interest is paid on the proprietor's capital. Such interest is an expense to the business and is debited to profit and Loss Account.

Interest on capital A/c Dr

To Capital A/c

P&L A/c		Balance Sheet	
To Interest on capital		Capital (+) Interest on Capital	

12. Interest on Drawings

Often, interest is charged on drawings made by the proprietor. It is a gain to the business.

Drawings A/c Dr

To Interest on drawings A/c

P&L A/c

	To Interest on drawings
--	-------------------------

Balance sheet

Capital (+) Interest on Capital (-) Interest on drawings	
---	--

13. Transfer to Reserve

Reserves save a business from future losses and meet the losses without reduction in capital. The reserves are appropriation of profits and are created only in the year when there are profits.

Profit and A/c Dr

To Reserve A/c

P&L A/c

To New reserve	
----------------	--

Balance Sheet

Reserve (+) New reserve	
----------------------------	--

14. Commission on Profit

The Commission as a percentage of the net profit may be 'before' or 'after' charging such commission. In the absence of any special instruction, it is assumed that commission is allowed as a percentage of the net profit before charging such commission.

a) If the commission is on the net profit before charging such commission, the formula is.

$$\text{Profit before} \times \frac{\text{Rate of commission}}{100}$$

For example, if profit is Rs.22,000 and rate of commission is 10% on the profit before charging such commission, the calculation is as follow:

$$\text{Commission} = 22,000 \times \frac{10}{100} = 2,200$$

b) If the commission is on the net profit after charging such commission, the amount is calculated as follows:

$$\text{Commission} = \text{Profit} \times \frac{\text{Rate}}{(100+\text{rate})}$$

$$\begin{aligned} \text{Commission as per above example} &= 22,000 \times \frac{10}{110} \\ &= \text{Rs.2,000} \end{aligned}$$

Manager's Commission A/c Dr.

To Outstanding commission A/c

P & L A/c

To Outstanding commission	
---------------------------	--

Balance Sheet

Outstanding Commission	
------------------------	--

15. Loss of goods by fire or accidents

a) Such losses are abnormal losses. Stock destroyed by fire or accidents is credited to the Trading Account.

Loss of stock A/c Dr

To Trading A/c

Trading A/c

	By Loss by fire
--	-----------------

Balance Sheet

	Insurance claims
--	------------------

The loss of stock is closed by transferring the amount to Profit and Loss Account.

b) If the loss is fully covered by insurance, no portion of the loss is debiting to the Profit and Loss Account. The amount due by Insurance Company is shown as an asset in the Balance Sheet.

Insurance Company A/c Dr

To Loss of Stock A/c

c) If the Insurance Company agree to pay only a part of the loss, the position of loss not covered by insurance is debited to Profit and Loss Account and the amount due by the Insurance Company is shown as an assets in the Balance Sheet.

Insurance Company A/c Dr

Profit and Loss A/c Dr

To Loss of stock A/c

16. Goods drawn for personal use

If goods are drawn by the proprietor for the personal use or domestic purpose, the cost of such goods drawn is deducted from purchase account and the same is added to his drawings.

Drawing A/c Dr

To Purchase A/c

Trading A/c

To Purchases (-) Drawings	
------------------------------	--

Balance Sheet

Capital (-) Drawings	
-------------------------	--

The amount of such drawings can not be treated as sales, as the goods are not drawn at selling price.

17. Goods used in office from purchases

In certain trading concern, good bought for trading purpose are used in the office. The cost of such goods used is to be deducted form purchases and added to printing and stationery or office expense.

Printing and Stationery A/c Dr

or

Office expenses A/c Dr

To Purchases A/c

18. Goods sent on sale or return basis

The sales value of such goods if included in the total sales should be deducted from sales and debtors. The entry for the same is:

Sale Return A/c Dr

or

Sale A/c Dr

To Debtors

19. Goods distributed as free samples

It may be debited in the goods sent as free samples or Advertisement account and credited to Purchases Account.

Goods sent as free sample A/c Dr

To Purchases A/c

9.9 Preparation of Final Accounts

(Trading and Profit & loss a/c and Balance sheet)

Illustration 6

The following balances are drawn from the books of M/s Arvind Mills as on 31-12-1997.

Account	Amount	Account	Amount
	Rs		Rs.
Land	1,00,000	Sales	3,00,000
Building	2,00,000	Purchases	1,75,000
Sales returns	10,000	Stock (1-1-97)	25,000
Purchase returns	5,000	Debtors	50,000
Bank overdraft	15,000	Cash in hand	5,000
Creditors	20,000	Salaries	10,000
Wages	12,000	Goodwill	15,000
General expenses	5,000	Selling expenses	12,000
Bad debts	1,000	Insurance	1,000
Capital	2,81,000		

Adjustments:

- Closing stock is Rs.30,000
- Provide for depreciation @ 10 % on buildings.
- Write off further bad debts – Rs. 1,000
- Salaries yet to be paid- Rs. 3,000

You are required to prepare a trading and profit & loss a/c and balance sheet of M/s Arvind Mills.

Solution:

**Trading and Profit and Loss account of M/s. Arvind Mills for the year ended
31-012-97.**

Dr.

Cr.

Particulars		Rs.	Particulars		Rs
To Opening stock		25,000	By Sales	3,00,000	
To Purchases	1,75,000		Less: Returns	10,000	2,90,000
Less: Returns	5,000	1,70,000	By Closing stock		30,000
To Wages		12,000			

To Gross profit c/d		1,13,000			
		3,20,000			3,20,000
To General expenses		5,000	By Gross Profit b/d		1,13,000
To Bad debts: Old	1,000				
New	1,000	2,000			
To Salaries	10,000				
Add: Outstanding	3,000	13,000			
To Insurance		1,000			
To Depreciation on Building (2,00,000 x 10 %)		20,000			
To Selling expenses		12,000			
To Net profit, transferred to capital A/c		60,000			
		1,13,000			1,13,000

Balance sheet of M/s. Arvind Mills as on 31-12-1997.

Liabilities	Rs.	Rs.	Assets	Rs.	Rs
Bank overdraft		15,000	Cash on hand		5,000
Creditors		20,000	Debtors	50,000	
Outstanding salaries		3,000	Less: Bad debts written off.	1,000	49,000
Capital	2,81,000		Closing stock		30,000
Add: Net profit	60,000	3,41,000	Building	2,00,000	
			Less: Depreciation at 10%	20,000	1,80,000
			Land		1,00,000
			Goodwill		15,000
		3,79,000			3,79,000

Illustration -7

The following is the Trial balance as on 31st December 1992 extracted from the books of Mr. Shanthi

Particulars	Debit Rs.	Credit Rs.
Freehold Land	35,000	
Mortgage Loan		20,000
Plant and Machinery	45,500	
Loose tools 1.1.92	5,600	
Bills payable		3,400
Book debts	18,200	
Sales		1,21,500
Cash at bank	11,000	
Stock 1.1.1992	10,500	
Insurance	300	
Bad debts	560	
Sundry creditors		15,600
Bills Receivable	5,400	
Purchases	50,000	
Cash on hand	640	
Rent, Rates, etc.	1,300	
Interest	250	
Wages	10,700	
Trade expenses	150	
Salary	1,560	
Repairs to plant	875	
Carriage Inwards	350	
Discount	290	175
Satish's capital		40,000
Drawings	2,500	
	2,00,675	2,00,675

Prepare trading and profit and loss account and balance sheet after making the following adjustment: Provision for doubtful debts at 5% on book debts; Interest on capital at 5% unexpired insurance premium Rs.90; Rent outstanding on 31-12-92 Rs. 300; Loose tools revalued at Rs.4,500, Closing stock Rs.30,000.

Solution

Trading and Profit and Loss A/c of Mr.Satish For the year ended 31st December 1992

Dr.			Cr.	
Particulars		Rs.	Particulars	Rs.
To Opening stock		10,500	By Sales	1,21,500
To Purchases		50,000	By Closing stock	30,000
To Wages		10,700		
To Carriage inwards		350		
To Gross profit c/d		79,950		
		1,51,500		1,51,500
To Insurance	300		By Gross profit b/d	79,950
Less: Unexpired	90	210	By Discount	175
To Bad debts	560			
Add: Provision for doubtful debts	910	1470		
To Rent & Rates	1,300			
Add: Outstanding	300	1,600		
To Interest		250		
To Trade expenses		150		
To Salary		1,560		
To Repairs to plant		875		
To Discount		290		
To Interest on capital (40,00 x 5%)		2,000		
To Depreciation on Loose tools		1,100		
To Net profit, transferred to capital A/c		70,620		
		80,125		80,125

Note : Loose tools are generally revalued at the end of accounting year. They are the low value tools and implements like spanners, screw drivers etc. The difference between closing value of loose tools and their opening value is to be treated as depreciation. (Revaluation method of depreciation)

Balance sheet of Mr. Satish as on 31-12-1992

Liabilities		Rs.	Assets		
Bills payable		3,400	Cash at Bank		11,000
Sundry creditors		15,600	Cash on hand		640
Outstanding rent		300	Book debts	18,200	
Mortgage loan		20,000	Less: Provision for doubtful debts	910	17,290
Capital	40,000		Bills receivable		5,400
Add: Net profit	70,620		Closing stock		30,000
Add: Interest on capital	2,000		Prepaid insurance		90
	1,12,620		Loose tools	5,600	
Less: Drawings	2,500	1,10,120	Less: Depreciation	1,100	4,500
			Plant and machinery		45,500
			Freehold land		35,000
		1,49,420			1,49,420

Note : Prepaid Insurance and unexpired insurance are both one and the same.

Illustration 8

The following Trial Balance is extracted from the books of a merchant on 31st December 1989.

Particulars	Debit Rs.	Credit Rs.
Furniture and fittings	640	
Motor vehicles	6,250	
Buildings	7,500	
Capital		12,500
Bad debts	125	
Provision for bad debts		200
Sundry debtors and creditors	3,800	2,500
Stock on January 1, 1989	3,460	
Purchases and sales	5,475	15,450
Bank overdraft		2,850
Sales and purchase returns	200	125
Advertising	450	

Interest	118	
Commission		375
Cash	650	
Taxes and insurance	1,250	
General expenses	782	
Salaries	3,300	
	34,000	34,000

The following adjustment are to be made:

- (a) Stock in hand on 31st December 1989 was Rs.3,250.
- (b) Depreciate buildings @ 5%, furniture and fittings @ 10% and motor vehicles @ 20%.
- (c) Rs.85 is due for interest on bank overdraft.
- (d) Salaries Rs.300 and taxes Rs.120 are outstanding.
- (e) Insurance amounting to Rs.100 is prepaid.
- (f) One-third of the commission received is in respect of work to be done next year.
- (g) Write off a further Rs.100 as bad debts and provision for bad debts is to be made at 5% on sundry debtors.
- (h) Purchases included purchase of furniture Rs.200, on January 1, 1989.

Prepare a trading and profit and loss A/c for the year ending 31st December 1989 and a balance sheet as on that date.

Solution:**Trading and profit and Loss A/c for the year ended 31st December 1989.**

Particulars		Rs.	Particulars		Rs.
To Opening stock		3,460	By Sales	15,450	
To Purchases	5,475		Less: Sales returns	200	15,250
Less: Purchase returns	125		By Closing stock		3,250
	5,350				
Less: Purchase of furniture	200	5,150			
To Gross profit c/d		9,890			
		18,500			18,500
To Advertising		450	By Gross profit b/d		9,890
To Interest	118		By Commission	375	
Add: Outstanding	85	203	Less: Received in advance	125	250
To Bad debts	125				
Add: New Bad debts	100				
Add: Provision required (3,800 – 100) x 5%	185				
	410				
Less: Existing provision	200	210			
To Taxes and insurance	1,250				
Less: Insurance prepaid	100				
	1,150				
Add: Taxes outstanding	120	1,270			
To Depreciation:					
Buildings (7,500 x 5%)	375				
Furniture x (640+200)10%	84				
Motor vehicles (6,250x20%)	1,250	1,709			
To General expenses		782			
To Salaries	3,300				
Add: Outstanding	300	3,600			
To Net profit, transferred to Capital account		1,916			
		10,140			10,140

Balance sheet as on 31st December 1989

Liabilities	Rs.	Rs.	Assets	Rs.	Rs.
Creditors		2,500	Cash		650
Bank overdraft		2,850	Sundry debtors	3,800	
Outstanding expenses :			Less: Bad debts	100	
Interest due	85			3,700	
Salaries	300		Less: Provision for bad debts	185	3,515
Taxes	120	505	Closing stock		3,250
Commission received in advance		125	Insurance prepaid		100
Capital	12,500		Furniture	640	
Add: Net profit	1,916	14,416	Add: Purchases	200	
				840	
			Less: Depreciation	84	756
			Motor vehicles	6,250	
			Less: Depreciation	1,250	5,000
			Building	7,500	
			Less: Depreciation	375	7,125
		20,396			20,396

Illustration 9

From the following data, prepare a profit and loss a/c and a balance sheet as on 31-3-1996.

Particulars	Rs.	Particulars	Rs.
Drawings	10,000	Capital	30,000
Purchases	30,000	Purchase returns	1,000
Sales Returns	5,000	Sales	60,000
Carriage in	2,000	Wages outstanding	2,000
Carriage out	3,000	Rent received	1,000
Depreciation on Plant	4,000	Reserve for doubtful debts	1,000
Plant account	20,000	Interest (Cr)	5,000
Salaries & wages	3,000	Sundry creditors	6,000

Bad debts	2,000	Loans	38,000
Premises	20,000		
Interest	5,000		
Stock 1.4.95	25,000		
Sundry debtors	15,000		
	1,44,000		1,44,000

Adjustment:

- Stock on 31-3-96 was Rs.40,000. A fire broke-out in the godown and destroyed stock worth Rs.5,000. Insurance company had accepted the claim in full.
- Provide for bad debts @ 10% and provide for discount on debtors @ 5% and on creditors @ 10%
- Depreciate buildings at the rate of 15% p.a.
- Rent outstanding amounted to Rs.1,000
- Closing stock includes samples worth of Rs.2,000.
- Provide interest on drawings @ 10% and on capital @ 10%.

Solution:

Trading and profit and loss account for the year ending 31st March 1996

Particulars	Rs.	Rs.	Particulars	Rs.	Rs.
To Opening stock		25,000	By Sales	60,000	
To purchases	30,000		Less: Returns	5,000	55,000
Less: purchase returns	1,000		By Closing stock		38,000
	29,000		By Stock destroyed by fire		5,000
Less: Sample	2,000	27,000			
To Carriage inwards		2,000			
To Gross Profit C/d		44,000			
		98,000			98,000
To Salaries & Wages		3,000	By Gross profit b/d		44,000
To Rent outstanding		1,000	By Rent received		1,000
To Carriage outwards		3,000	By Interest		5,000
To Bad debts	2,000		By Provision of discount creditors 6,000 x 10%		600

Add: New provision for bad debts (15,000 x 10%)	1,500		By Interest on drawings (10,000 x 10%)		1,000
	3,500				
Less: Existing provision for bad bets	1,000	2,500			
To Provision for discount on debtors (15,000-1,500) x 5%		675			
Interest		5,000			
To Depreciation:					
Plant	4,000				
Building (20,000x15%)	3,000	7,000			
To Interest on capital		3,000			
To Net profit, transferred to capital account.		26,425			
		51,600			51,600

Note:

- (1) Premises include Land and Buildings, So, depreciation on Buildings applies to premises.
- (2) Stock destroyed by fire is credited to trading a/c and claim is shown as an asset.
- (3) Depreciation on plant given in Trial balance is assumed to be current year's depreciation.
- (4) Samples included in closing stock should be separated from stock by reducing from stock. So, effective closing stock is only Rs.38,000.

The samples should be reduced from purchases because they are not meant for sale. Since they are not yet distributed, they appear on assets side of balance sheet.

Adjustment entry is:

Samples A/c	Dr2,200	
To purchases A/c		2000

Balance sheet as on 31.3.1996

Liabilities		Rs.	Assets		Rs.
Sundry creditors	6,000		Debtors	15,000	
Less: Provision for discount	600		Less: Provision for bad debts	1,500	
		5,400		13,500	
Loans		38,000			
Wages outstanding		2,000	Less: Provision for discount on debtors	675	12,825
Rent outstanding		1,000			
Capital	30,000		Closing stock		38,000
Add: Net profit	26,425		Samples in stock		2,000
Add: Interest on capital	3,000		Insurance claim Receivable		5,000
	59,425		Plant		20,000
Less: Interest on drawings	1,000		Premises	20,000	
	58,425		Less: Depreciation	3,000	17,000
Less: Drawings	10,000				
		48,425			
		94,825			94,825

Illustration - 10

The following is the Trial balance of B.Gopal on 30th June 1981:

	Debit Rs.	Credit Rs.
Cash in hand	540	
Cash at bank	2,630	
Purchases account	40,675	
Sales account		98,780
Returns inward account	680	
Returns outward account		500
Wages account	10,480	
Fuel and Power A/c	4,730	
Carriage on Sales A/c	3,200	
Carriage on Purchases A/c	2,040	
Stock Account (1 st July, 1980)	5,760	
Buildings Account	30,000	
Freehold Land A/c	10,000	
Machinery A/c	20,000	
Patents A/c	7,500	

Salaries Account	15,000	
General expenses A/c	3,000	
Insurance Account	600	
Drawings Account	5,245	
Capital account		71,000
Sundry debtors A/c	14,500	
Sundry creditors A/c		6,300
	1,76,580	1,76,580

Taking into account the following adjustments prepare Trading and Profit & Loss account and the balance sheet:

- Stock on hand 30th June, 1981 is Rs.6,800. Machinery is to be depreciated at the rate of 10% and patents at the rate of 20%.
- Salaries for the month of June 1981 amount to Rs.1,500 were unpaid.
- Insurance includes a premium of Rs. 170 on a policy expiring on 31st December, 1981.
- Wages include a sum of Rs.2,000 spent on the creation of a cycle shed for employees and customers.
- A provision for bad and doubtful debts is to be created to the extent of 5% on sundry debtors.

Solution:

**Trading and profit and Loss Account of Gopal
for the year ended 30th June 1981.**

Dr.			Cr.		
Particulars		Rs.	Particulars		Rs.
To Opening stock		5,760	By Sales	98,780	
To Purchase	40,675		Less: Sales returns	680	
Less: Purchase returns	500	40,175	By Closing stock		98,100
To Carriage on purchases		2,040			6,800
To Wage	10,480				
Less: Wages for erection of cycle shed	2,000	8,480			
To Fuel and power		4,730			
To Gross profit b/d		43,715			
		1,04,900			1,04,900
To Carriage on sales		3,200	By Gross profit b/d		43,715

To Salaries	15,000				
Add: Outstanding	1,500	16,500			
To General expenses		3,000			
To Insurance	600				
Less: Prepaid 170 x 6/12	85	515			
To Depreciation:					
Machinery					
20,000 x 10%	2,000				
Patents 7,500 x 20%	1,500	3,500			
To Provision for doubtful debts (14,500 x 5%)		725			
To Net profit transferred to capital A/c		16,275			
		43,715			43,715

Note:

1. Carriage on Purchased is carriage inward;
Carriage on Sales is carriage outward.
2. Wages for erecting cycleshed is a capital expenditure. It should be reduced from wages and added to the asset i.e., cycleshed (or) Buildings.
3. Out of insurance Rs.600. Rs.170 is paid on a policy which is upto Dec. 81. So,
 $170 \times \frac{6}{12} = \text{Rs.}85$ it's the insurance prepaid.

Balance sheet of B. Gopal as on 30th June 1981

Liabilities	Rs.	Rs.	Assets	Rs.	Rs.
Sundry creditors		6,300	Cash in hand		540
Salaries unpaid		1,500	Cash at bank		2,630
Capital	71,000		Sundry debtors	14,500	
Add: Net profit	16,275		Less: Provision for doubtful debts	725	
	87,275				13,775
Less: Drawings	5,245		Closing stock		6,800
		82,030	Prepaid insurance		85
			Machinery	20,000	
			Less: Depreciation	2,000	18,000
			Patents	7,500	
			Less: Written off	1,500	6,000
			Freehold land		10,000
			Building	30,000	
			Add: Wages incurred for cycleshed erection	2,000	
					32,000
		89,830			89,830

9.10 LET US SUM UP

Balance sheet is the last financial statement. It helps to know the financial position of an organisation. Not only that one can find the different kinds of assets and liabilities. By seeing the balance sheet we can say the concern solvent are not.

9.11 LESSON END ACTIVITIES

1. What is Balance sheet? Why is it prepared?
2. Explain the classification of assets Liabilities?
3. From the following Trial Balance of Mr. Annadurai, prepare Trading and Profit & Loss account for the year ended 30-6-2001 and a Balance Sheet as on that date:

	Debit Rs.	Credit Rs.
Drawings	5,000	-
Insurance	600	-
General expenses	3,000	-
Debtors and Creditors	14,500	6,300
Furniture	7,500	-
Plant & machinery	20,000	-
Building	40,000	-
Stock (1-7-2000)	5,800	-
Carriage inwards	2,000	-
Carriage outwards	3,200	-
Salary & wages	15,000	-
Power & fuel	4,000	-
Productive wages	10,500	-
Returns	600	500
Purchases and Sales	41,000	98,800
Cash in hand & at bank	3,900	-
Ganesh's capital	-	71,000
	1,76,600	1,76,600

Adjustment:

- (i) Stock on 30-6-2001 was valued at Rs.7,000.
- (ii) Charge 5% interest on drawings.

- (iii) Goods purchased worth Rs.5,000 were received and included in closing stock but were not entered in purchases book.
- (iv) Prepaid insurance amounted to Rs.170.
- (v) Salaries and advertisement bill are outstanding to the extent of Rs.500 and Rs.1,000 respectively.
- (vi) Building, Machinery and Furniture are to be depreciated by Rs.2,000, Rs.3,000 and Rs.1,500 respectively.
4. The following is the trial balance of Mr.Palani as on 31-3-95, prepare final accounts as on that date.

Trial Balance as on 31-12-2000

	Dr Rs.	Cr Rs.
Capital	-	1,00,000
Building	15,000	-
Drawing	18,000	-
Furniture	7,500	-
Motor car	25,000	-
Loan from Y @ 12% interest	-	15,000
Interest paid on above	900	-
Sales	-	1,00,000
Purchase	75,000	
Opening stock	25,000	
Sundry expenses	15,000	
Wages	2,000	
Insurance	1,000	
Commission received	-	7,500
Debtors	28,100	-
Bank balance	20,000	-
Creditors	-	10,000
	2,32,500	2,32,500

Adjustment:

- (i) Closing stock Rs.32,000;
- (ii) Outstanding wages Rs.500;
- (iii) Prepaid insurance Rs.300;
- (iv) Commission received in advance Rs.800;
- (v) Interest on capital 10%;
- (vi) Depreciate; buildings 21/2; furniture and fittings 10%; motor van 10%;
- (vii) Interest on drawings Rs.500.

5. The following balance were taken from the books of Shri. Ram Prasad on 31-3-1996.

	Rs.		Rs.
Capital	1,00,000	Rent (Cr)	2,100
Drawings	17,600	Railway freight and other expenses on good sold	16,940
Purchases	80,000	Carriage inwards	2,310
Sales	1,40,370	Office expenses	1,340
Purchase returns	2,820	Printing & stationery	660
Opening stock	11,460	Postage & telegrams	820
Bad debts	1,400	Sundry debtors	62,070
Bad debts provision (1-4-95)	3,240	Sundry creditors	18,920
Rates & insurance	1,300	Cash at bank	12,400
Discount (Cr)	190	Cash in hand	2,210
Bills receivable	1,240	Office furniture	3,500
Sales returns	4,240	Salaries & commission	9,870
Wages	6,280	Additions to buildings	7,000
Buildings	25,000		

Prepare Trading and Profit and Loss Account and Balance Sheet as on 31st March 1996, after keeping in view the following adjustment:

- (i) Depreciate old buildings at 2.5% and new additions to buildings at 2% and office furniture at 5%.
- (ii) Write off further bad debts at Rs.570.
- (iii) Increase the bad debts provision at 6% of debtors.
- (iv) Rs.570 are outstanding salary.
- (v) Rent receivable Rs.200.
- (vi) Interest on capital at 5%.
- (vii) Stock on 31-3-96 is valued at Rs.14,290.
- (viii) Unexpired insurance Rs.240.

9.12 CHECK YOUR PROGRESS ANSWER

Your answer may include any six of the following

1. Assets
2. Fixed assets
3. Current assets
4. Tangible assets
5. Intangible assets
6. Fictitious assets

9.13 POINTS FOR DISCUSSION

1. What are the classification of assets & liabilities.

2. Give the Proforma of Balance Sheet.

9.14 REFERENCES

1. Gupta & Radhaswamy – Advanced Accountancy.
2. Jain & Naway – Advanced Accountancy.
3. Shukla & Grewal – Advanced Accountancy.

LESSON 10 COST ACCOUNTING

Contents:

- 10.0 Objectives**
- 10.1 Introduction**
- 10.2 Definition of Cost, Costing, Cost Accounting and Cost Accountancy**
- 10.3 Scope of Cost Accounting**
- 10.4 Objectives of Cost Accounting**
 - 10.4.1 Ascertainment of Cost
 - 10.4.2 Fixation of Selling Price
 - 10.4.3 Cost Control
 - 10.4.4 Matching Cost with Revenue
 - 10.4.5 Special Cost Studies and Investigations
 - 10.4.6 Preparation of Financial Statements, Profit and Loss Account, Balance Sheet
- 10.5 Functions of Cost Accounting**
- 10.6 Advantages of Cost Accounting**
 - 10.6.1 Helps in decision making
 - 10.6.2 Helps in fixing prices
 - 10.6.3 Formulation of future plans
 - 10.6.4 Avoidance of wastage
 - 10.6.5 Highlights causes
 - 10.6.6 Reward to efficiency
 - 10.6.7 Prevention of frauds
 - 10.6.8 Improvement in profitability
 - 10.6.9 Preparation of final accounts
 - 10.6.10 Facilitates control
- 10.7 Objections of Cost Accounting**
 - 10.7.1 Cost Accounting is costly to operate
 - 10.7.2 Cost Accounting is unnecessary
 - 10.7.3 Cost Accounting involves many forms and statements
 - 10.7.4 Costing may not be applicable in all types of Industries
 - 10.7.5 It is based on Estimations
- 10.8 Characteristics of a good costing system**
 - 10.8.1 Simplicity
 - 10.8.2 Flexibility and Adaptability:
 - 10.8.3 Economy
 - 10.8.4 Comparability
 - 10.8.5 Suitability to the Firms
 - 10.8.6 Minimum Changes to the Existing one
 - 10.8.7 Uniformity of Forms
 - 10.8.8 Less Clerical Work
 - 10.8.9 Efficient Material Control and Wage System
 - 10.8.10 A Sound Plan

- 10.8.11 Reconciliation
- 10.8.12 Overall Efficiency of Cost Accountant

10.9 Installation of a costing system

- 10.9.1 Determination of objectives
- 10.9.2 Study of the nature of business
- 10.9.3 Study of the nature of the organization
- 10.9.4 Deciding the structure of cost accounts
- 10.9.5 Determination of cost rates
- 10.9.6 Organization of the cost office
- 10.9.7 Introducing the system

10.10 Cost concepts

- 10.10.1 Cost Unit
- 10.10.2 Cost Centre
- 10.10.3 Profit Centre
- 10.10.4 Distinguish between cost centre and profit centre

10.11 Cost control

10.12 Cost reduction

10.13 Difference between cost control and cost reduction

10.14 Let us Sum Up

10.15 Lesson-End Activities

10.16 Check your Progress

10.17 Points for Discussion]

10.18 References

10.0. AIMS AND OBJECTIVES

- i) To know the Meaning and Definition of cost, costing and cost Accounting
- ii) To study the objectives and functions of cost Accounting
- iii) To study the importance of cost Accounting
- iv) To know the Characteristics of a good costing system
- v) To study the cost control and cost reduction
- vi) To understand the meaning of cost unit, cost centre and profit centre.

10.1 INTRODUCTION

Industrialization and advent of factory system during the second half of 19th Century necessitating accurate cost information have led to the development of cost accounting. The growth of cost accounting was slow. To quote Eldons Handristen “Not until the last 20 years of the 19th Century was there much literature on the subject of cost accounting in England and even very little was found in the United States. Most of the literature until this time emphasized the procedure for the calculation of prime costs only”.

Rapid development in cost accounting has taken place after 1914 with the growth of heavy industry and large scale production as a consequence of First World War when cost other than material and labour (overhead) constituted a significant portion of total cost.

The development of cost accounting in India is of recent origin and it is given importance after independence, when provision for Cost Audit under Sec.233 B of Companies Act was made. Vivian Bose Enquiry Committee revealed the malpractices of manufacturing companies. It was felt that the financial audit falls short of expectations to reveal the malpractices. Therefore, under the Companies Act, the government was given the power to order for cost audit. This has given impetus to the development of cost accounting in India.

10.2 DEFINITION OF COST, COSTING, COST ACCOUNTING AND COST ACCOUNTANCY

Cost: The term 'cost' has to be studied in relation to its purpose and conditions. As per the definition by Institute of Cost and Management Accountants (I.C.M.A.), now known as Chartered Institute of Management Accountants (C.I.M.A.), London 'cost' is the amount of: actual expenditure incurred on a given thing.

Costing: The I.C.M.A., London has defined costing as the ascertainment of costs. "It refers to the techniques and processes of ascertaining costs and studies the principles and rules concerning the determination of cost of products and services".

Cost Accounting: It is the method of accounting for cost. The process of recording and accounting for all the elements of cost is called cost accounting. I.C.M.A. has defined cost accounting as follows: "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 centers 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: It is an aid to management for decision making. I.C.M.A., has defined cost accountancy as follows: "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".

10.3 SCOPE OF COST ACCOUNTING

The term scope here refers to field of activity. Cost accounting is concerned with ascertainment and control of costs. The information provided to the management is helpful for cost control and cost reduction through functions of planning, decision making and control.

In the initial stages of evolution, cost accounting confined itself to cost ascertainment and presentation of the same with the main objective of finding the product cost. With the development of business activity and introduction of large scale production, the scope of cost accounting was broadened and providing information for

cost control and cost reduction has assumed equal significance along with finding out cost of production.

In addition to enlargement of scope, the area of application of cost accounting has also widened. Initially cost accounting was applied in manufacturing activities only. Now, it is applied in service organizations, government organizations, local authorities, farms, extractive industries, etc.

10.4 OBJECTIVES OF COST ACCOUNTING

10.4.1 Ascertainment of Cost

It enables the management to ascertain the cost of product, job, contract, service or unit of production so as to develop cost standard. Costs may be ascertained, under different circumstances, using one or more types of costing principles-standard costing, marginal costing, uniform costing etc.

10.4.2 Fixation of Selling Price

Cost data are useful in the determination of selling price or quotations. Apart from cost ascertainment, the cost accountant analyses the total cost into fixed and variable costs. This will help the management to fix the selling price; sometimes, below the total cost but above the variable cost. This will increase the volume of sales-more sales than previously, thus leading to maximum profit.

10.4.3 Cost Control

The object is to minimize the cost of manufacturing. Comparison of actual cost with standards reveals the discrepancies- variances. If the variances are adverse, the management enters into investigation so as to adopt corrective action immediately.

10.4.4 Matching Cost with Revenue

The determination of profitability of each product, process, department etc. is the important object of costing.

10.4.5 Special Cost Studies and Investigations

It undertakes special cost studies and investigations and these are the basis for the management in decision-making or policies. This will also include pricing of new products, contraction or expansion programmes, closing down or continuing a department, product mix, price reduction in depression etc.

10.4.6 Preparation of Financial Statements, Profit and Loss Account, Balance Sheet

To prepare these statements, the value of stock, work-in-progress, finished goods etc., are essential; in the absence of the costing department, when we have to close the accounts it rather takes too much time. But a good system of costing facilitates the preparation of the statements, as the figures are easily available; they can be prepared monthly or even weekly.

10.5. FUNCTIONS OF COST ACCOUNTING

According to Blocker and Weltemer, “Cost Accounting is to serve management in the execution of polices and in comparison of actual and estimated results in order that the value of each policy may be appraised and changed to meet the future conditions”. The main functions of cost accounting are:

- i) To serve as a guide to price fixing of products.
- ii) To disclose sources of wastage in process of production.
- iii) To reveal sources of economy in production process.
- iv) To provide for an effective system of stores, materials etc.
- v) To exercise effective control on factors of production.
- vi) To ascertain the profitability of each product.
- vii) To suggest management of future expansion policies.
- viii) To present and interpret data for management decisions.
- ix) To organize cost reduction programmes.
- x) To facilitate planning and control of business activity.
- xi) To supply timely information for various decisions.
- xii) To organize the internal audit systems etc.

10.6. ADVANTAGES OF COST ACCOUNTING

10.6.1 Helps in Decision Making

Cost accounting helps in decision making. It provides vital information necessary for decision making. For instance, cost accounting helps in deciding:

- a. Whether to make a product buy a product?
- b. Whether to accept or reject an export order?
- c. How to utilize the scarce materials profitably?

10.6.2 Helps in fixing prices

Cost accounting helps in fixing prices. It provides detailed cost data of each product (both on the aggregate and unit basis) which enables fixation of selling price. Cost accounting provides basis information for the preparation of tenders, estimates and quotations.

10.6.3 Formulation of future plans

Cost accounting is not a post-mortem examination. It is a system of foresight. On the basis of past experience, it helps in the formulation of definite future plans in quantitative terms. Budgets are prepared and they give direction to the enterprise.

10.6.4 Avoidance of wastage

Cost accounting reveals the sources of losses or inefficiencies such as spoilage, leakage, pilferage, inadequate utilization of plant etc. By appropriate control measures, these wastages can be avoided or minimized.

10.6.5 Highlights causes

The exact cause of an increase or decrease in profit or loss can be found with the aid of cost accounting. For instance, it is possible for the management to know whether the profits have decreased due to an increase in labour cost or material cost or both.

10.6.6 Reward to efficiency

Cost accounting introduces bonus plans and incentive wage systems to suit the needs of the organization. These plans and systems reward efficient workers and improve productivity as well improve the morale of the work -force.

10.6.7 Prevention of frauds

Cost accounting envisages sound systems of inventory control, budgetary control and standard costing. Scope for manipulation and fraud is minimized.

10.6.8 Improvement in profitability

Cost accounting reveals unprofitable products and activities. Management can drop those products and eliminate unprofitable activities. The resources released from unprofitable products can be used to improve the profitability of the business.

10.6.9 Preparation of final accounts

Cost accounting provides for perpetual inventory system. It helps in the preparation of interim profit and loss account and balance sheet without physical stock verification.

10.6.10 Facilitates control

Cost accounting includes effective tools such as inventory control, budgetary control and variance analysis. By adopting them, the management can notice the deviation from the plans. Remedial action can be taken quickly.

10.7 OBJECTIONS OF COST ACCOUNTING

Cost accounting has become indispensable tool to management for exercising effective decisions. However, the following are the usual objections raised against cost accounting:

10.7.1 Cost Accounting is costly to operate

One of the objections against cost accounting is that it involves heavy expenditure to operate.No doubt, expenses are involved in introduction and operation of cost accounting system. This is the case with any accounting system; the benefits derived by operating the system are more than the cost. Therefore an organization need not hesitate to install and operate the system.

10.7.2 Cost Accounting is unnecessary

It is felt by a few that cost accounting is of recent origin and an enterprise can survive without cost accounting. No doubt financial accounting may be helpful to draw P & L Account and Balance Sheet but an enterprise can work efficiently with the help of cost accounting and it is necessary to increase efficiency and profitability in the long run.

10.7.3 Cost Accounting involves many forms and statements

It is pointed against cost accounting that it involves usage of many forms and statements which leads to monotony in filling up of forms and increase of paper work. It is true that cost accounting is operated by introducing many forms and preparation of statements. This will become routine and as time passes the utility of forms is realized and the forms can be reviewed, revised, simplified and minimized.

10.7.4 Costing may not be applicable in all types of Industries

Existing methods of cost accounting may not be applicable in all types of industries. Cost accounting methods can be devised for all types of industries, and services.

10.7.5 It is based on Estimations

Some people claim that costing system relies on predetermined data and therefore it is not reliable. Costing system estimates costs scientifically based on past and present situations and with suitable modifications for the future. This leads to accurate cost figures based on which management can initiate decisions. But for the predetermined costs, cost accounting also becomes another 'Historical Accounting'.

10.8. CHARACTERISTICS OF A GOOD COSTING SYSTEM

An ideal system of cost accounting must possess some characteristics which bring all the advantages, discussed above; to the business, in order to be ideal and objective. The main characteristics are:

10.8.1 Simplicity

It must be simple, flexible and adaptable to the changing conditions. And it must be easily understandable to the personnel. The information provided must be in the proper order, in right time and to the right persons so as to be utilized fully.

10.8.2 Flexibility and Adaptability

The costing system must be flexible to accommodate the changing conditions and circumstances. The expansion, contraction of changes must be adopted in the existing system with minimum changes.

10.8.3 Economy

The costing system must suit the finance available. The expenditure must be less than the benefits derived from the system adopted.

10.8.4 Comparability

The management must be able to make comparison of the facts and figures with the past figures, figures of other concerns, or other departments of the same concern.

10.8.5 Suitability to the Firms

Before accepting a costing system, the nature, requirements, size, conditions of the business etc., must be carefully considered. The system must be capable of prompt and accurate reporting to different levels of management according to their requirements.

10.8.6 Minimum Changes to the Existing one

When introducing a costing system, it may cause minimum disturbance to the existing set up of the business.

10.8.7 Uniformity of Forms

Forms of different colours can be used to distinguish them. Forms must be uniform in size and quality. Form should contain instructions to fill, to use and for disposal.

10.8.8 Less Clerical Work

Printed forms will involve less labour to fill in, as the workers may be a little educated. They may not like to spend much time in filling the forms.

10.8.9 Efficient Material Control and Wage System

There must be a proper procedure for recording the time spent on different jobs, by workers for the payment of wages. A systematic method of wage system will help in the control of labour cost. Since the cost of material forms a great proportion to the total cost, there must be an efficient system of stores control.

10.8.10 A Sound Plan

There must be proper and sound plans to collect, to allocate and to apportion overhead expenses on each job or each product in order to find out the cost accurately.

10.8.11 Reconciliation

The systems of costing and financial accounting must be facilitated to reconcile in the easiest manner.

10.8.12 Overall Efficiency of Cost Accountant

The work of the cost accountant under a good system of costing must be clearly defined as to his duties and responsibilities to the firm are very essential.

10.9 INSTALLATION OF A COSTING SYSTEM

The costing system of an organization should be carefully planned in order to achieve its objectives. The important steps for the installation of a costing system are discussed below:

10.9.1 Determination of objectives

The first and foremost step is to clearly lay down the objectives of the costing system. If the objective is only to ascertain the cost, a simple system will be sufficient. However, if the objective is to get information for decision making, planning and control, a more elaborate system of costing is necessary.

10.9.2 Study of the nature of business

The nature of the business and other technical aspects like nature of the products, methods and stages of production cycle should be carefully analyzed. Such an analysis is necessary to decide the method of costing to be adopted. For example, contract costing is suitable for large construction projects. Operating costing is adopted by service industries like transport.

10.9.3 Study of the nature of the organization

The costing system should be designed to meet the requirements of the organization. Hence, it is necessary to study the nature, size and layout of the organization. The factors to be considered are:

- a. Size of the organization and the size of the departments.
- b. The physical layout of the organization.
- c. The different levels of management.
- d. The extent of decentralization of authority.
- e. The nature of authority relationships.

10.9.4 Deciding the structure of cost accounts

A suitable costing system can be developed on the basis of the study of the nature of business and organization. The structure of cost accounts should be simple and in accordance with the natural production process.

10.9.5 Determination of cost rates

This step involves a thorough study of the following points for developing an integrated costing system.

- a. Classification of costs into direct and indirect costs.
- b. Grouping of indirect costs (overheads) into production, administration, selling and distribution etc.
- c. Methods of pricing issues.
- d. Treatment of wastes of all types.
- e. Absorption of overheads.

- f. Calculation of overhead rates.

10.9.6 Organization of the cost office

The cost office is responsible for the efficient operation of the costing system. The cost office, with adequate staff must be located a close as possible to the factory. The following are the major functions of the cots office.

- a. Stores accounts.
- b. Labour accounting
- c. Recording of cost data and
- d. Cost control.

Further, the role and duties and responsibilities of the cost accountant must be clearly defined. He must have the necessary authority to discharge his duties effectively.

10.9.7 Introducing the system

After completion of the above steps, the costing system may be formally introduced. Introduction of the system in an existing organization should be done gradually. Before introduction, the feature of the systems, its working and advantages must be explained to the concerned employees to secure their co-operation.

Check Your Progress 10

List out any three functions of cost accounting

- Notes: (a) Write your answer in the space given below.
- (b) Check your answer with the ones given at the end of this Lesson (pp. 158).

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10.10 COST CONCEPTS

- 10.10.1 Cost Unit
- 10.10.2 Cost Centre
- 10.10.3 Profit Centre

10.10.1 Cost Unit:

A cost unit refers to a unit of product, service or time in relation to which costs may be ascertained or expressed. In other words, cost unit is the unit of output for which cost is ascertained. For examples, the cost of air-conditioner is ascertained per unit.

The selection of cost unit is important in cost accounting. It should be carefully selected to suit the nature of business operation. The selected unit should be neither too small nor too big, but ideal for cost ascertainment. Cost unit may be expressed in terms of number (units), weight, area, length etc. The following are the cost units in various industries.

Industry	Cost Unit
Refrigerators, Cars, Scooters	Per unit
Television sets, Motor Cycles	Per unit
Watches, Radios	Per unit
Sugar	Per quintal
Cement, Steel, Coal	Per tonne
Paper	Per tonne
Textiles	Per metre
Chemicals	Per kg/tonne/litre
Electricity	Per kilowatt hour (kwh.)
Passenger transport	Per passenger k.m.
Goods transport	Per tonne k.m.
Ceramic tiles	Per square foot or per unit
Bricks	Per 1,000 Nos.
Road contract	Per. k.m.

Thus, cost units may vary from industry to industry. An enterprise which produces more than one type of product may have more than one cost unit.

10.10.2 Cost Centre

A large business is divided into a number of functional departments (such as production, marketing and finance) for administrative convenience. These departments are further divided into smaller divisions for cost ascertainment and control. These smaller divisions are called cost centers.

A cost centre is a location, person or item of equipment (or group of these) in relation to which cost can be ascertained and controlled. In simple words, it is a subdivision of the organization to which cost can be charged.

A cost centre can be: (a) a location i.e. an area such as works department, store yard (b) a person such as supervisor, sales man (c) an item of equipment e.g. delivery van, or a particular machine.

The determination of suitable cost centre is very important for the purpose of cost ascertainment and control. The manager of a cost centre is held responsible for control of cost of his cost centre. The number and size of cost centers vary from organization to organization. The selection of a suitable cost centre depends on the following factors:

- a. Nature and size of the business.
- b. Layout and organization of the factory.
- c. Availability of various cost data and information.
- d. Management policy regarding cost ascertainment and control.

Types of cost centres: Cost centres may be of the following types.

Production cost centre: A cost centre in which production is carried on is known as production cost centre. e.g., machine shop, welding shop, assembly shop, etc.

Service cost centre: A cost centre which renders service to production cost centre is known as service centre e.g. power house, stores department, maintenance department etc.

Personal cost centre: It consists of a person or a group of persons e.g. Sales manager, Works manager etc.

Impersonal cost centre: It consists of a location or a machine or a group of machines. e.g. canteen.

Operation cost centre: It consists of machines and / or persons carrying out similar operations. e.g. machines and operators engaged in welding or turning.

10.10.3 Profit Centre

A profit centre is a responsibility centre which accumulates revenues as well as costs. In other words, it is a department or segment of the organization which has been assigned control over both revenues and cost. For instance, if there are two divisions in a textile company, say readymade and clothing, each one may be regarded as a profit centre.

10.10.4 Distinguish between cost centre and profit centre

Important differences between cost centre and profit centre are:

- i) Cost centre is created by the cost accountant. On the other hand, a profit centre is created by the top management.
- ii) Cost centre is created for the purpose of cost ascertainment and control. But the profit centre is created for the purpose of evaluation of performance.
- iii) Cost centre is a small segment, whereas profit centre is a large segment.
- iv) Cost centres do not enjoy autonomy. But, profit centres enjoy autonomy.
- v) Cost centre does not have a target of costs. But a profit centre has a target of profit for performance evaluation.

10.11 COST CONTROL

Cost control can be defined as the comparative analysis of actual costs with appropriate standards of budgets to facilitate performance evaluation and formulation of corrective measures. It aims at accomplishing conformity between actual result and standards or budgets. Cost control is keeping expenditures within prescribed limits. Cost control has the following features:

- i) Creation of responsibility centres with defined authority and responsibility for cost incurrence.
- ii) Formulation of standards and budgets that incorporate objectives and goals to be achieved.
- iii) Timely cost control reports (responsibility reporting) describing the variances between budgets and standards and actual performance.
- iv) Formulation of corrective measures to eliminate and reduce unfavourable variances.
- v) A systematic and fair plan or motivation to encourage workers to accomplish budgetary goals.
- vi) Follow-up to ensure that corrective measures are being effectively applied.

Cost control does not necessarily mean reducing the cost but its aim is to have the maximum utility of the cost incurred. In other words, the objective of cost control is the performance of the same job at a lower cost or a better performance for the same cost.

10.12 COST REDUCTION

Cost reduction may be defined as an attempt to bring costs down. Cost reduction implies real and permanent reduction in the unit cost of goods manufactured or services rendered without impairing their (product or goods) suitability for the use intended. The goal of cost reduction is achieved in two ways: (i) by reducing the cost per unit and (ii) by increasing productivity. The steps for cost reduction include elimination of waste, improving operations, increasing productivity, search for cheaper materials, improved standards of quality, finding other means to reduce unit costs.

Cost reduction has to be achieved using internal factors within the organisation. Reduction of costs due to external factors such as reduction in taxes, government subsidies, grants etc. do not come under the concept of cost reduction.

10.13 DIFFERENCE BETWEEN COST CONTROL AND COST REDUCTION

Cost reduction is a much wider concept than cost control. As stated earlier, cost control aims at controlling costs within prescribed limits with the help of budgets and standards. The following are the differences between the two:

Cost Control	Cost Reduction
1. Cost control process involves (a) setting targets and standards (b) ascertaining actual performance (c) comparing actual performance with targets (d) investigating the variances and (e)	1. Cost reduction is not concerned with setting targets and standards and maintaining performance according to standards. Cost reduction is the final result in the

taking corrective action.	cost control process.
2. Cost control aims at achieving standards, i.e. cost targets. It assumes existence of standards.	2. Cost reduction aims at improving the standards. It challenges standards and assumes existence of concealed potential savings in the standards.
3. It follows a conservative procedure and lacks dynamic approach.	3. It is continuous, dynamic and innovative in nature, looking always for measures and alternative to reduce costs.
4. It is a preventive function.	4. It is a corrective function.
5. In cost control, costs are optimised before they are incurred.	5. In cost reduction, there is always assumed a scope for reducing the incurred costs under controlled conditions.
6. It is generally applicable to items which have standards.	6. This is applicable to every activity of the business.
7. It contains guidelines and directive of management as to how to do a thing.	7. It adds thinking and analysis to action at all levels of management.

10.14 LET US SUM UP

Cost is the expenditure incurred on product/services. Costing is the method/techniques of ascertaining cost. The process of accounting for cost is called cost accounting. Cost accounting is helpful to reduce cost and for cost control. Cost accounting is helpful in decision making, production, marketing and administrative areas require cost reduction programmes.

10.15 LESSON END ACTIVITIES

- 1 Define 'Cost', 'Costing', 'Cost Accounting' and 'Cost Accountancy'.
- 2 Briefly explain the objectives and scope of cost accounting.
- 3 What are the advantages of cost accounting?
- 4 What is cost control?
- 5 What is cost reduction?
- 6 What are the differences between cost control and cost reduction?

10.16 CHECK YOUR PROGRESS

Your answer may include any six of the following:

1. To serve as a guide to price fixing of products.
2. To disclose sources of wastage in process of production.
3. To reveal sources of economy in production process.
4. To provide for an effective system of stores, materials etc.
5. To exercise effective control on factors of production.

6. To ascertain the profitability of each product.

10.17 POINTS FOR DISCUSSION

1. What are the requisites of a good costing system?
2. What are the methods and techniques of costing? Describe each of them briefly.

10.18 REFERENCES

1. Jain & Narang – Cost Accountancy.
2. S.N. Maheswari – Management Accounting.

LESSON- 11 MANAGEMENT ACCOUNTING

Contents:

11.0 Aims and objectives

11.1 Introduction

11.2 Definitions

11.3 Objectives of Management Accounting

11.4 Scope of Management Accounting

11.4.1 Financial Accounting

11.4.2 Cost Accounting

11.4.3 Budgeting and Forecasting

11.4.4 Inventory Control

11.4.5 Statistical Analysis

11.4.6 Analysis of Data

11.4.7 Internal Audit

11.4.8 Tax Accounting

11.4.9 Methods and Procedures

11.5 Functions of Management Accounting

11.5.1 Presentation of Data

11.5.2 Aid to Planning and Forecasting

11.5.3 Decision Making

11.5.4 Communication of Management Policies

11.5.5 Effective Control

11.5.6 Incorporation of non-financial information

11.5.7 Co-ordination

11.6 Advantages of Management Accounting

11.6.1 Helps in Decision Making

11.6.2 Helps in Planning

11.6.3 Helps in Organizing

11.6.4 Facilitates Communication

11.6.5 Helps in Coordinating

11.6.6 Evaluation and Control of Performance

11.6.7 Interpretation of Financial Information

11.6.8 Economic Appraisal

11.7 Limitations of Management Accounting

11.7.1 Based on Accounting Information

11.7.2 Wide scope

11.7.3 Costly

11.7.4 Evolutionary Stage

11.7.5 Opposition to Change

11.7.6 Intuitive Decisions

11.7.7 Not an Alternative to Management

11.8 Distinguish between Management Accounting and cost accounting

- 11.8.1 Purpose
- 11.8.2 Emphasis
- 11.8.3 Principles and Procedures
- 11.8.4 Data Used
- 11.8.5 Scope

11.9 Distinguish between management accounting and financial accounting

- 11.9.1 Objectives
- 11.9.2 Performance Analysis
- 11.9.3 Data Used
- 11.9.4 Nature
- 11.9.5 Accuracy
- 11.9.6 Legal Compulsion
- 11.9.7 Monetary Transactions
- 11.9.8 Control

11.10 Distinguish between cost accounting and financial accounting.

- 11.10.1 Objective
- 11.10.2 Legal requirement
- 11.10.3 Classification of transactions
- 11.10.4 Stock valuation
- 11.10.5 Analysis of Profit and cost
- 11.10.6 Accounting period
- 11.10.7 Emphasis
- 11.10.8 Nature

11.11 Let us Sum Up

11.12 Lesson-End Activities

11.13 Check your Progress

11.14 Points for Discussion

11.15 References

11.0 AIMS AND OBJECTIVES

- (i) To study the definition, objectives and scope of management accounting.
- (ii) To understand the functions, advantages and limitations of management accounting.
- (iii) To study the distinction between management, cost and financial accounting.

11.1 INTRODUCTION

The term management accounting refers to accounting for the management. Management accounting provides necessary information to assist the management in the creation of policy and in the day-to-day operations. It enables the management to discharge all its functions i.e. planning, organization, staffing, direction and control efficiently with the help of accounting information.

11.2 DEFINITIONS

“Management accounting is concerned with accounting information that is useful to management”. – R.N. Anthony.

“Management accounting is the presentation of accounting information in such a way as to assist management in the creation of policy and in the day-to-day operations of an undertaking”.- Anglo American Council of Productivity.

11.3 OBJECTIVES OF MANAGEMENT ACCOUNTING

The objectives of management accounting are:

- (1) to assist the management in promoting efficiency. Efficiency includes best possible services to the customers, investors and employees.
- (2) to prepare budget covering all functions of a business (i.e. production, sales, research and finance).
- (3) to analysis monetary and non-monetary transactions.
- (4) to compare the actual performance with plan for identifying deviations and their causes.
- (5) to interpret financial statements to enable the management to formulate future policies.
- (6) to submit to the management at frequent intervals operating statements and short-term financial statements.
- (7) to arrange for the systematic allocation of responsibilities.
- (8) to provide a suitable organization for discharging the responsibilities.

In short, the objective of management accounting is to help the management in making decisions and implementing them efficiently.

11.4 SCOPE OF MANAGEMENT ACCORDING

Management accounting has various facets. The field of management accounting is very wide. The main purpose of management accounting is to provide information to the management to perform its functions of planning directing and controlling. Management accounting includes various areas of specialization to render effective service to the management.

11.4.1 Financial Accounting

Financial Accounting deals with financial aspects by preparation of Profit and Loss Account and Balance Sheet. Management accounting rearranges and uses the financial statements. Therefore management accounting does not exclusively maintain factual data for itself. It is closely related and connected with financial accounting. thus, management accounting is dependent on financial accounting which limits its scope.

11.4.2 Cost Accounting

Cost accounting is an essential part of management accounting. Cost accounting, through its various techniques, reveals efficiency of various divisions, departments and products. It also provides information regarding cost of products process and jobs through different methods of costing. Management accounting makes use of all this data by focusing it towards managerial decisions.

11.4.3 Budgeting and Forecasting

Budgeting is setting targets by estimating expenditure and revenue for a given period. Forecasting is prediction of what will happen as a result of a given set of circumstances. Targets are fixed for various departments and responsibility is pinpointed for achieving the targets. Actual results are compared with preset targets and performance is evaluated.

11.4.4 Inventory Control

This includes, planning, coordinating and control of inventory from the time of acquisition to the stage of disposal. This is done through various techniques of inventory control like stock levels, ABC and VED analysis physical stock verification, etc.

11.4.5 Statistical Analysis

In order to make the information more useful statistical tools are applied. These tools include charts, graphs, diagrams index numbers, etc. For the purpose of forecasting, other tools such as time series regression analysis and sampling techniques are used.

11.4.6 Analysis of Data

Financial statements are analysed and compared with past statements, compared with those of other firms and with standards set. The analysis and interpretation results in drawing reports and presentation to the management.

11.4.7 Internal Audit

Internal audit helps the management in fixing individual responsibility for internal control.

11.4.8 Tax Accounting:

Tax liability is ascertained from income statements. Tax planning is done by following the various tax incentives offered by the Central and State Governments. Knowledge of tax provisions helps the management in meeting the tax liabilities and complying with other legislations like Sales tax, Companies Act and MRTP Act.

11.4.9 Methods and Procedures:

In includes keeping of efficient system for data processing and effective reporting of required data in time.

11.5 FUNCTIONS OF MANAGEMENT ACCOUNTING

Main objective of management accounting is to help the management in performing its functions efficiently. The major functions of management are planning, organizing, directing and controlling. Management accounting helps the management in performing these functions effectively.

11.5.1 Presentation of Data

Traditional Profit and Loss Account and the Balance Sheet are not analytical for decision making. Management accounting modifies and rearranges data as per the requirements for decision making through various techniques.

11.5.2 Aid to Planning and Forecasting

Management accounting is helpful to the management in the process of planning through the techniques of budgetary control and standard costing. Forecasting is extensively used in preparing budgets and setting standards.

11.5.3 Decision Making

Management accounting provides comparative data for analysis and interpretation for effective decision making and policy formulation.

11.5.4 Communication of Management Policies

Management accounting conveys the policies of the management downward to the personnel effectively for proper implementation.

11.5.5 Effective Control

Standard costing and budgetary control are integral part of management accounting. These techniques lay down targets, compare actual with standards and budgets to evaluate the performance and control the deviations.

11.5.6 Incorporation of non-financial information

Management accounting considers both financial and non-financial information for developing alternative courses of action which leads to effective and accurate decisions.

11.5.7 Co ordination

The targets of different departments are communicated to them and their performance is reported to the management from time to time. This continual reporting helps the management in coordinating various activities to improve the overall performance.

11.6 ADVANTAGES OF MANAGEMENT ACCOUNTING

The advantages of management accounting are summarized below:

11.6.1 Helps in Decision Making

Management accounting helps in decision making such as pricing, make or buy, acceptance of additional orders, selection of suitable product mix etc. These important decision are taken with the help of marginal costing technique.

11.6.2 Helps in Planning

Planning includes profit planning, preparation of budgets, programmes of capital investment and financing. Management accounting assists in planning through budgetary control, capital budgeting and cost-volume-profit analysis.

11.6.3 Helps in Organizing

Management accounting uses various tools and techniques like budgeting, responsibility accounting and standard costing. A sound organizational structure is developed to facilitate the use of these techniques.

11.6.4 Facilitates Communication

Management is provided with up-to-date information through periodical reports. These reports assist the management in the evaluation of performance and control.

11.6.5 Helps in Co-ordinating

The functional budgets (purchase budget, sales budget, and overhead budget etc.) are integrated into one known as master budget. This facilitates clear definition of department goals and coordination of their activities.

11.6.6 Evaluation and Control of Performance

Management accounting is a convenient tool for evaluation of performance. With the help of ratios and variance analysis, the efficiency of departments can be measured. Management accounting assists the management in the location of weak spots and in taking corrective actions.

11.6.7 Interpretation of Financial Information

Management accounting presents information in a simple and purposeful manner. This facilitates quick decision making.

11.6.8 Economic Appraisal

Management accounting includes appraisal of social and economic forces and government polices. This appraisal helps the management in assessing their impact on the business.

11.7 LIMITATIONS OF MANAGEMENT ACCOUNTING

Management accounting suffers from the following limitations:

11.7.1 Based on Accounting Information

Management accounting derives information from past financial accounting and cost accounting records. If the past records are not reliable, it will affect the effectiveness of management accounting.

11.7.2 Wide scope

Management accounting has a very wide scope incorporating many disciplines. This results in inaccuracy and other practical difficulties.

11.7.3 Costly

The installation of management accounting system requires a large organization. Hence, it is very costly and only big concerns can afford to adopt it.

11.7.4 Evolutionary Stage

Management accounting is still in its initial stages. Tools and techniques are not fully developed. This creates doubts about the utility of management accounting.

11.7.5 Opposition to Change

Introduction of management accounting system requires a number of changes in the organization structure, rules and regulations. This rearrangement is not generally liked by the people involved.

11.7.6 Intuitive Decisions

Management accounting helps in scientific decision making. Yet, because of simplicity and personal factors the management has a tendency to arrive at decisions by intuition.

11.7.7 Not an Alternative to Management

Management accounting will not replace the management and administration. It is a tool of the management. Decisions are of the management and not of the management accountant.

11.8 DISTINGUISH BETWEEN MANAGEMENT ACCOUNTING AND COST ACCOUNTING

Cost accounting and Management accounting are two modern branches of accounting. Both the systems involve presentation of accounting data for the purpose of decision making and control of day-to-day activities. Cost accounting is concerned not only with cost ascertainment, but also cost control and managerial decision making. Management accounting makes use of the cost accounting concepts, techniques and data. The functions of cost accounting and management accounting are complimentary. In cost accounting the emphasis is on cost determination while management accounting considers both the cost and revenue. Though it appears that

there is overlapping of areas between cost and management accounting, the following are the differences between the two systems.

11.8.1 Purpose

The main objective of cost accounting is to ascertain and control the cost of products or services. The function of management accounting is to provide information to management for efficiently performing the functions of planning, directing, and controlling.

11.8.2 Emphasis

Cost accounting is based on both historical and present data, whereas management accounting deals with future projections on the basis of historical and present cost data.

11.8.3 Principles and Procedures

Established procedures and practices are followed in cost accounting. No such prescribed practices are followed in Management accounting. The analysis is made and the resulting conclusions are presented in reports as per the requirements of the management.

11.8.4 Data Used

Cost accounting uses only quantitative information whereas management accounting uses both qualitative and quantitative information.

11.8.5 Scope

Management accounting includes, financial accounting, cost accounting, budgeting, tax planning and reporting to management, whereas Cost accounting is concerned mainly with cost ascertainment and control.

11.9 DISTINGUISH BETWEEN MANAGEMENT ACCOUNTING AND FINANCIAL ACCOUNTING

The following are the main differences between financial accounting and management accounting.

11.9.1 Objectives

The main objective of financial accounting is to supply information in the form of profit and loss account and balance sheet to outside parties like shareholders, creditors, government etc. But the objective of management accounting is to provide information for the internal use of management.

11.9.2 Performance Analysis

Financial accounting is concerned with the overall performance of the business. On the other hand management accounting is concerned with the departments or divisions. It report about the performance and profitability of each of them.

11.9.3 Data Used

Financial accounting is mainly concerned with the recording of past events whereas management accounting is concerned with future plans and policies.

11.9.4 Nature

Financial accounting is based on measurement while management accounting is based on judgement. Because of this, financial accounting is more objective and management accounting is more subjective.

11.9.5 Accuracy

Accuracy is an important factor in financial accounting. But approximations are widely used in management accounting. This is because most of the information is related to the future and intended for internal use.

11.9.6 Legal Compulsion

Financial accounting is compulsory for all joint stock companies but management accounting is only optional .

11.9.7 Monetary Transactions

Financial accounting records only those transactions which can be expressed in terms of money. On the other hand, management accounting records not only monetary transactions but also non- monetary events, namely technical changes, government polices etc.

11.9.8 Control

Financial accounting will not reveal whether plans are properly implemented. Management accounting will reveal the deviations of actual performance from plans. It will also indicate the causes for such deviations.

Check your progress 11

What are the advantages of the management accounting.

- Notes: (a) Write your answer in the space given below.
(b) Check your answer with the ones given at the end of this Lesson (pp.171).

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11.10 DISTINGUISH BETWEEN COST ACCOUNTING AND FINANCIAL ACCOUNTING

Differences between Cost Accounts and Financial Accounts are listed below:

11.10.1 Objective

The main objective of cost accounting is to provide cost information to management for decision making. The main objective of financial accounting is to prepare Profit and Loss A/c and Balance Sheet to report to owners and outsiders.

11.10.2 Legal Requirement

Cost accounts are maintained to fulfil the internal requirements of the management as per conventional guideline. Financial records are maintained as per the requirement of Companies Act and Income Tax Act.

11.10.3 Classification of Transactions

Cost accounting records and analyses expenditure in an objective manner viz., according to purpose for which costs are incurred. Financial accounting classifies records and analyses transactions in a subjective manner i.e., according to nature of expenses.

11.10.4 Stock Valuation

In cost accounts stocks are valued at cost. In financial accounts, stocks are valued at cost or realisable value, whichever is lesser.

11.10.5 Analysis of Profit and Cost

Cost accounts reveal Profit or Loss of different products, departments separately. In financial accounts, the Profit or Loss of the entire enterprise is disclosed into.

11.10.6 Accounting period

Cost report are continuous process and are prepared as per the requirements of managements, may be daily, weekly, monthly, quarterly, or annually. Financial reports are prepared annually.

11.10.7 Emphasis

Cost accounting lays emphasis on ascertainment of cost and cost control. Financial accounts emphasis is laid on the recording of transactions and control aspect is not given importance.

11.10.8 Nature

Cost accounts lay emphasis on both historical and predetermined costs. Financial accounts are maintained on the basis of historical records.

11.11 LET US SUM UPS

Accounting relating to management called as management accounting. Management has to take decision on day-to-day basis or long-term basis based on

some information. Management accounting provides this information to management. Cost accounts provide information relating to cost but management accounting includes both cost and revenue. Financial accounting provides accounting information to the outsiders where as management accounting provides accounting information to the internal management.

11.12 POINTS FOR DISCUSSION

1. Define 'Management accounting'.
2. Briefly explain the objectives of Management accounting.
3. Explain the scope and advantages of Management accounting.
4. Describe the limitations of Management accounting.
5. What are the functions of Management accounting?

11.13 CHECK YOUR PROGRESS ANSWER

Your answer may include the following:

1. Helps in Decision Making
2. Helps in Planning
3. Helps in Organizing
4. Facilitates Communication
5. Helps in Coordinating
6. Evaluation and Control of Performance
7. Interpretation of Financial Information

11.14 POINTS FOR DISCUSSION

1. Distinguish between Management accounting and cost accounting.
2. Distinguish between cost accounting and financial accounting.

11.15 REFERENCES

1. S.N. Maheswari – Management Accounting.
2. R.K. Sharma and K. Gupta – Management Accounting.

LESSON - 12 ELEMENTS OF COST

Contents:

- 12.0 Aims and Objectives**
- 12.1 Introduction**
- 12.2 Elements of cost**
- 12.3 Classification of cost**
 - 12.3.1 By Nature or Elements
 - 12.3.2 By Functions
 - 12.3.3 As Direct and Indirect
 - 12.3.4 By Variability
 - 12.3.5 By Controllability
 - 12.3.6 By Normality
 - 12.3.7 By Capital or Revenue
 - 12.3.8 By Time
 - 12.3.9 According to Planning and Control
 - 12.3.10 For Managerial Decisions
- 12.4 Methods of Costing**
 - 12.4.1 Job costing
 - 12.4.2 Contract costing
 - 12.4.3 Batch costing
 - 12.4.4 Process costing
 - 12.4.5 Unit costing
 - 12.4.6 Operating costing
 - 12.4.7 Operation costing
 - 12.4.8 Multiple Costing
- 12.5 Techniques of costing**
 - 12.5.1 Historical costing
 - 12.5.2 Direct costing
 - 12.5.3 Absorption costing
 - 12.5.4 Uniform costing
 - 12.5.5 Marginal costing
 - 12.5.6 Standard costing
- 12.6 Let us Sum Up**
- 12.7 Lesson-End Activities**
- 12.8 Check your Progress**
- 12.9 Points for Discussion**
- 12.10 References**

12.0. AIMS AND OBJECTIVES

- i) To understand the elements of cost.
- ii) To study the classification of cost.
- iii) To study the methods and techniques of costing.

12.1. Introduction

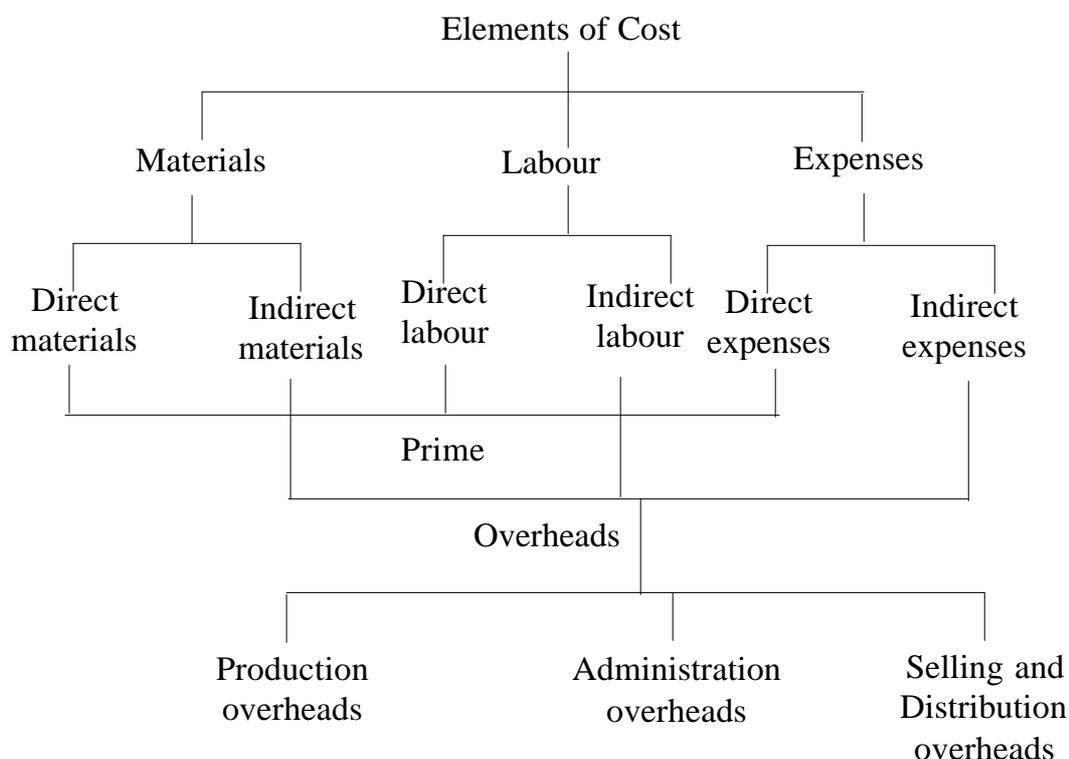
A classification has to be made to arrive at the detailed costs of departments, production orders, jobs or other cost units. The total cost of production can be found without such analysis, and in many instances an average unit cost could be obtained but none of the advantages of an analysed cost would be available.

12.2. Elements of Cost

Simple ascertainment of total cost cannot satisfy the various requirements of decision making. For effective control and managerial decision making, data is to be provided on the basis of analysed and classified costs. In order to satisfy this objective, the cost is analysed by elements of cost i.e., by nature of expenditure. The elements of cost are:

1. Materials
2. Labour and
3. Expenses

The above elements of cost are analysed in the chart given below:



Materials: The substances from which the products are made are known as materials. They can be direct or indirect.

Direct materials: Direct materials are those materials which form a part of finished product. These materials cost can be conveniently identified with and allocated to a particular product, process or job. It is a part of a prime cost, e.g. Timber in furniture making, cloth the dress making, leather in shoe making, bricks in building a house etc.

Indirect materials: Indirect materials are those materials which do not form a part of a financial product. Cost of indirect materials cannot be identified with and

allocated but can be apportioned to a particular product, process or job, e.g. Cotton waste, lubricant, grease, etc.

Labour: For conversion of raw materials into finished product human effort is needed. Such human effort is called labour. Labour can be direct as well as indirect.

Direct Labour: Direct labour is that labour which is directly engaged in the production of goods or services. The wages of such labour are known as direct wages. These labour cost or direct wages can be identified with and allocated to a particular product, process or job. It is a part of the prime cost, e.g. Wages of spinners and weavers in a textiles factory.

Indirect labour: Indirect labour is that labour which is not directly engaged in production of goods or services. It indirectly helps the direct labour engaged in production. The wages paid for indirect labour is known as indirect wages. Indirect wages cannot be identified with and allocated but can be apportioned to a particular product, process or job e.g. wages of machines, supervisors, watchman, sweepers, time-keeper etc.

Expenses: Expenses may be direct expenses or indirect expenses.

Direct Expenses: All expenses (other than direct material cost or direct wages) that are directly charged to production are direct expenses. It is parts of the prime cost e.g. excise duty, royalty on production, cost of special drawings and designs, architect's fees or equipment for a particular job etc.

Indirect Expenses: Expense (other than indirect material and indirect labour) that are not directly charged to production are indirect expenses. It can be classified as follows.

a) Factory overheads: These are also called manufacturing overhead or works overhead or work on cost. Factory overheads cover all indirect expenses incurred from the stage of raw materials to finished goods. It includes indirect material, indirect wages and indirect expenses e.g. factory rent, supervisors salary, power and fuel, heating and lighting, depreciation of factory building etc.

b) Administrative overheads: These are expenses incurred for running administrative office e.g. office rent and salaries, printing and stationary, legal expenses, telephone expenses etc.

c) Selling overheads: These are expenses incurred for actual sales and promotion of sales e.g. salaries of sales manager, commission, traveling expenses of salesman and promotion expenses like advertising and publicity, after sales service etc.

d) Distribution overheads: These are expenses concerned with the packing and delivery of goods to the customers e.g. packing charges, warehouse expenses, depreciation of delivery van, loading charges etc.

12.3. CLASSIFICATION OF COST

Cost classification is the process of grouping costs according to their common characteristics. It is the placement of like items together according to their common characteristics. A suitable classification of costs is of vital importance in order to identify the cost with cost centres or cost units. Costs may be classified according to their nature, i.e. material, labour and expenses and a number of other characteristics. The same cost figures are classified according to different ways of costing depending

upon the purpose to be achieved and requirements of a particular concern. The important ways of classification are:

- | | | | |
|---------|-----------------------------------|--------|----------------|
| 12.3.1 | By Nature or Elements | 12.3.2 | By Functions |
| 12.3.3 | As Direct and Indirect | 12.3.4 | By Variability |
| 12.3.5 | By Controllability | 12.3.6 | By Normality |
| 12.3.7 | By Capital or Revenue | 12.3.8 | By Time |
| 12.3.9 | According to Planning and Control | | |
| 12.3.10 | For Managerial Decisions. | | |

Now each classification will be discussed in detail.

12.3.1 By Nature or Element or Analytical Classification

According to this classification, the costs are divided into three categories i.e. Materials, Labour and Expenses. There can be further sub classification of each element; for example, material into raw material components, and spare parts, consumable stores, packing material etc. This classification is important as it helps to find out the total cost, how such total cost is constituted and valuation of work in progress.

12.3.2 By Functions

According to this classification costs are divided in the light of the different aspects of basics managerial activities involved in the operation of a business undertaking. It leads to grouping of cost according to the broad divisions or functions of a business undertaking i.e., production, administration selling and distribution. According to this classification costs are divided as follows:

Manufacturing and Production Cost: This is the total of costs involved in manufacture, construction and fabrication of units of production.

Commercial Cost: This is the total of costs incurred in the operation of a business undertaking other than the cost of manufacturing and production. Commercial cost may further be sub-divided into (a) administrative cost and (b) selling and distribution cost. These terms will be explained in a subsequent chapter.

12.3.3 As Direct and Indirect

According to this classification, total cost is divided into direct costs and indirect costs. Direct costs are those which are incurred for and may be conveniently identified with a particular cost centre or cost unit. Materials used and labour employed in manufacturing an article or in a particular process of production are common examples of direct costs. Indirect costs are those cost which are incurred for the benefit of number of cost centres or cost units and cannot be conveniently identified with a particular cost centre or cost unit. Examples of indirect cost include rent of building, management salaries, machinery depreciation etc. The nature of the business and the cost unit chosen will determine which costs are direct and which are indirect. For example, the hire of a mobile crane for use by a contractor at site would be regarded as a direct cost but if the crane is used as a part of the services of a factory, the hire charges would be regarded as indirect cost because it will probably benefit more than one cost centre. The importance of the distinction of costs into direct and indirect lies in the fact that direct costs of a product or activity can be

accurately determined while indirect costs have to be apportioned on certain assumptions as regards their incidence.

12.3.4 By Variability

According to this classification, costs are classified according to their behaviour in relation to changes in the level of activity or volume of production. On this basis, costs are classified into three groups viz. fixed, variable and semi-variable.

(i) Fixed or period costs are commonly described as those which remain fixed in total amount with increase or decrease in the volume of output or productive activity for a given period of time. Fixed cost per unit decreases as production increases and increases as production declines. Examples of fixed costs are rent, insurance of factory building, factory manager's salary etc. These fixed costs are constant in total amount but fluctuate per unit as production changes. These costs are known as period costs because these are dependent on time rather than on output. Such costs remain constant per unit of time such as factory rent of Rs.10,000 per month remaining same for every month irrespective of output of every month.

(ii) Variable or product costs are those which vary in total in direct proportion to the volume of output. These costs per unit remain relatively constant with changes in production. Thus, variable costs fluctuate in total amount but tend to remain constant per unit as production activity changes. Examples are direct material costs, direct labour costs, power, repairs etc. Such costs are known as product costs because they depend on the quantum of output rather than on time.

(iii) Semi-variable costs are those which are partly fixed and partly variable. For example, telephone expenses included a fixed portion of annual charge plus variable charge according to calls; thus total telephone expenses are semi-variable. Other examples of such costs are depreciation, repairs and maintenance of building and plant etc.

12.3.5 By Controllability

Under this, costs are classified according to whether or not they are influenced by the actions of a given member of the undertaking. On this basis it is classified into two categories:

(i) Controllable costs are those which can be influenced by the action of a specified member of an undertaking, that is to say, costs which are at least partly within the control of management. An organization is divided into a number of responsibility centres and controllable costs incurred in a particular cost centre can be influenced by the action of the manager responsible for the centre. Generally speaking, all direct costs including direct material, direct labour and some of the overhead expenses are controllable by lower level of management.

(ii) Uncontrollable costs are those which cannot be influenced by the action of a specified member of an undertaking that it is to say, which are within the control of management. Most of the fixed costs are uncontrollable. For example, rent of the building is not controllable and so are managerial salaries. Overhead cost, which is incurred by one service section and is apportioned to another which receives the service, is also not controllable by the latter.

The distinction between controllable and uncontrollable is sometimes left to individual judgment and is not sharply maintained. It is only in relation to a particular level of management or an individual manager that we may say whether a cost is controllable or uncontrollable. A particular item of cost which may be controllable from the point of view of one level of management may be uncontrollable from another point of view. Moreover, there may be an item of cost which is controllable from long term point of view and uncontrollable from short term point of view. This is partly so in the case of fixed costs.

12.3.6 By Normality

Under this, costs are classified according to whether these are cost which are normally incurred as a given level of output in the conditions in which that level of activity is normally attained. On this basis, it is classified into two categories:

(a) Normal cost: It is the cost which is normally incurred at a given level of output in the conditions in which that level of output is normally attained. It is a part of cost of production.

(b) Abnormal cost: It is the cost which is not normally incurred at a given level of output in the conditions in which that level of output is normally attained. It is not a part of cost of production and charged to Costing Profit and Loss Account.

12.3.7 By Capital and Revenue or Financial Accounting Classification

The cost which is incurred in purchasing assets either to earn income or increasing the earning capacity of the business is called capital cost. For example, the cost of a rolling machine in case of steel plant. Such cost is incurred at one point of time but the benefits accruing from it are spread over a number of accounting years. It any expenditure is done in order to maintain the earning capacity of the concern such as cost of maintaining an asset or running a business it is revenue expenditure e.g. cost of materials used in production, labour charges paid to convert the material into production, salaries, depreciation, repairs and maintenance charges, selling and distribution charges etc. The distinction between capital and revenue items is important in costing as all items of revenue expenditure are taken into consideration while calculating cost whereas capital items are completely ignored.

12.3.8 By Time

Cost can be classified as (i) Historical costs and (ii) Predetermined costs.

i) Historical costs: The cost which is ascertained after their incurrence is called historical costs. Such costs are available only when the production of a particular thing has already been done. Such costs are only of historical value and not at all helpful for cost control purposes. Basic characteristics of such costs are:

- (a) They are based on recorded facts.
- (b) They can be verified because they are always supported by the evidence of their occurrence.
- (c) They are mostly objective because they relate to happenings which have already taken place.

ii) Predetermined costs: Such costs are estimated costs i.e. computed in advance of production taking into consideration the previous period's costs and the factors affecting such costs. Predetermined cost determined on scientific basis becomes standard cost. Such costs when compared with actual costs will give the

reasons of variance and will help the management to fix the responsibility and to take remedial action to avoid its recurrence in future.

Historical costs and predetermined costs are not mutually exclusive but they work together in the accounting system of an organization. In competitive age, it is better to lay down standards, so that after comparison with the actual, the management may be able to take stock of the situation to find out as to how far the standards fixed by it have been achieved and take suitable action in the light of such information. Therefore, even in a system when historical costs are used, predetermined costs have a very important role to play because a figure of historical cost by itself has no meaning unless it is related to some other standard figure to give meaningful information to the management.

12.3.9 According to Planning and Control

Planning and control are two important functions of management. Cost accounting furnishes information to the management which is helpful in the due discharge of these two functions. According to this, costs can be classified as budgeted costs and standard costs.

i) Budgeted costs: Budgeted costs represent an estimate of expenditure for different phases of business operations such as manufacturing, administration, sales, research and development etc. coordinated in a well conceived framework for a period of time in future which subsequently becomes the written expression of managerial targets to be achieved. Various budgets are prepared for various phases, such as raw material cost budget, labour cost budget, cost of production budget, manufacturing overhead budget, office and administration overhead budget etc. Continuous comparison of actual performance (i.e. actual cost) with that of the budgeted cost is made so as to report the variations from the budgeted cost to the management for corrective action.

ii) Standard Cost: Budgeted costs are translated into actual operation through the instrument of standard costs. The Institute of Cost and Management Accountants, London defines standard cost as follows: “Standard cost is the predetermined cost based on a technical estimate for materials, labour and overhead for a selected period of time and for a prescribed set of working conditions”. Thus, standard cost is a determination, in advance of production of what should be the cost.

Budgeted costs and standard costs are similar to each other to the extent that both of them represent estimates for cost for a period of time in future. In spite of this, they differ in the following aspects:

1. Standard costs are scientifically predetermined costs of every aspect of business activity whereas budgeted costs are mere estimates made on the basis of past actual financial accounting data adjusted to future trends. Thus, budgeted costs are projection of financial accounts whereas standard costs are projection of cost accounts.

2. The primary emphasis of budgeted costs is on the planning function of management whereas the main thrust of standard costs is on control because standard costs lay emphasis on what should be the costs.

3. Budgeted costs are extensive whereas standard costs are intensive in their application. Budgeted costs represent a macro approach of business operations because they are estimated in respect of the operations of a department. Contrary to

this, standard costs are concerned with each and every aspect of business operation carried in a department. Thus, budgeted costs deal with aggregates whereas standard costs deal with individual parts which make the aggregate. For example, budgeted costs are calculated for different functions of the business i.e. production, sales, purchases etc. whereas standard costs are compiled for various elements of costs i.e. materials, labour and overhead.

12.3.10 For Managerial Decisions

On this basis, costs may be classified into the following costs:

i) Marginal cost: Marginal cost is the total of variable costs i.e. prime cost plus variable overheads. It is based on the distinction between fixed and variable costs. Fixed costs are ignored and only variable costs are taken into consideration for determining the cost of products and value of work in progress and finished goods.

ii) Out of pocket costs: This is that portion of the cost which involves payment to outsiders i.e., gives rise to cash expenditure as opposed to such costs as depreciation, which do not involve any cash expenditure. Such costs are relevant for price fixation during recession or when make or buy decision is to be made.

iii) Differential costs: The change in costs due to change in the level of activity or pattern or method of production is known as differential costs. If the change increases the cost, it will be called incremental cost. If there is decrease in cost resulting from decrease of output, the difference is known as decremental cost.

iv) Sunk costs: A sunk cost is an irrecoverable cost and is caused by complete abandonment of a plant. It is the written down value of the abandoned plant less its salvage value. Such costs are not relevant for decision making and are not affected by increase or decrease in volume.

v) Imputed costs: These costs are those costs which appear in cost accounts only e.g. national rent charged on business premises owned by the proprietor, interest on capital for which no interest has been paid. These costs are also known as notional costs. When alternative capital investment projects are being evaluated it is necessary to consider the imputed interest on capital before a decision is arrived as to which is the most profitable project.

vi) Opportunity cost: It is the maximum possible alternative earning that might have been earned if the productive capacity or services had been put to some alternative use. In simple words, it is the advantage, in measurable terms, which has been foregone due to not using the facility in the manner originally planned. For example, if an owned building is proposed to be used for a project, the likely rent of the building is the opportunity cost which should be taken into consideration while evaluating the profitability of the project.

vii) Replacement cost: It is the cost at which there could be purchased an asset or material identical to that which is being replaced or revalued. It is the cost of replacement at current market price.

viii) Avoidable and unavoidable cost: Avoidable costs are those which can be eliminated if a particular product or department, with which they are directly related, is discontinued. For example, salary of the clerks employed in a particular department can be eliminated, if the department is discontinued. Unavoidable cost is that cost which will not be eliminated with the discontinuation of a product or

department. For example, salary of factory manager or factory rent cannot be eliminated even if a product is eliminated.

12.4. METHODS OF COSTING

The method of costing refers to a system of cost ascertainment and cost accounting. Industries differ in their nature, in the products they produce and the services they offer. Hence, different methods of costing are used by different industries. For example, the method of costing employed by a building contractor is different from that of a transport company.

Job costing and process costing are the two basic methods of costing. Job costing is suitable to industries which manufacture or execute the work according to the specifications of the customers. Process costing is suitable to industries where production is continuous and the units produced are identical. All other methods are combinations, extensions or improvements of these basic methods. The methods of costing are explained in detail.

12.4.1 Job costing

It is also called specific order costing. It is adopted by industries where there is no standard product and each job or work order is different from the others. The job is done strictly according to the specifications given by the customer and usually the job takes only a short time for completion. The purpose of job costing is to ascertain the cost of each job separately. Job costing is used by printing presses, motor repair shops, automobile garages, film studios, engineering industries etc.

12.4.2 Contract costing

It is also known as terminal costing. Basically, this method is similar to job costing. However, it is used where the job is big and spread over a long period of time. The work is done according to the specifications of the customer. The purpose of contract costing is to ascertain the cost incurred on each contract separately. Hence a separate account is prepared for each contract. This method is used by firms engaged in ship building, construction of buildings, bridges, dams and roads.

12.4.3 Batch costing

It is an extension of job costing. A batch is a group of identical products. All the units in a particular batch are uniform in nature and size. Hence each batch is treated as a cost unit and costed separately. The total cost of a batch is ascertained and it is divided by the number of units in the batch to determine the cost per unit. Batch costing is adopted by manufacturers of biscuits, ready made garments, spare parts medicines etc.

12.4.4 Process costing

It is called continuous costing. In certain industries, the raw material passes through different processes before it takes the shape of a final product. In other words, the finished product of one process becomes the raw material for the subsequent process. Process costing is used in such industries.

A separate account is opened for each process to find out the total cost as well as cost per unit at the end of each process. Process costing is applied to continuous process industries such as chemicals, textiles, paper, soap, lather etc.

12.4.5 Unit costing

This method is also known as single or output costing. It is suitable to industries where production is continuous and units are identical. The objective of this method is to ascertain the total cost as well as the cost per unit. A cost sheet is prepared taking into account the cost of material, labour and overheads, Unit costing is applicable in the case of mines, oil drilling units, cement works, brick works and units manufacturing cycles, radios, washing machines etc.

12.4.6 Operating costing

This method is followed by industries which render services. To ascertain the cost of such services, composite units like passenger kilometers and tone kilometers are used for ascertaining costs. For example, in the case of a bus company, operating costing indicates the cost of carrying a passenger per kilometer. Operating costing is adopted by airways railways, road transport companies (goods as well as passengers) hotels, cinema halls, power houses etc.

12.4.7 Operation costing

This is a more detailed application of process costing. It involves costing by every operation. This method is used where there is mass production of repetitive nature involving a number of operations. The main purpose of this method is to ascertain the cost of each operation. For instance, the manufacture of handles for bicycles involves a number of operations such as cutting steel sheets into proper strips, moulding, machining and finally polishing. The cost of these operations may be found out separately. Operation costing provides a minute analysis of costs to achieve accuracy and it is applied in industries such as spare parts, toy making and engineering.

12.4.8 Multiple Costing

It is also known as composite costing. It refers to a combination of two or more of the above methods of costing. It is adopted in industries where several parts are produced separately and assembled to a single product.

12.5 TECHNIQUES OF COSTING

In addition to different methods of costing, the following techniques are used for the purpose of ascertaining costs.

12.5.1 Historical costing

In this, actual costs are ascertained after they have been incurred. This is a conventional method of cost ascertainment.

12.5.2 Direct costing

The ascertainment of direct costs in respect of department, product or process. This is the aggregate of marginal cost and a portion of fixed cost that are identifiable with the product or process. Direct costs are, therefore, traceable costs.

12.5.3 Absorption costing

It is also known as total cost approach. Under this technique, all costs, both fixed and variable are charged to product, process or operations. It is useful in submitting tenders, preparing job estimates etc.

12.5.4 Uniform costing

It is the use of some costing principles and methods by several concerns for common control or comparison of costs.

12.5.5 Marginal costing

It classifies cost into fixed and variable and only variable costs are charged to product. This type of costing is useful in taking important decisions such as price decisions in time of competition make or buy decisions, selecting profitable product mix etc.

12.5.6 Standard costing

Standard cost is predetermined cost. The costs are determined in advance of production. Standard performance is set in terms of costs. Actual costs are compared with the standards and variations are found. Then, reasons for variations are investigated and remedial actions are taken. This system enables control of costs and also measurement of efficiency of operations.

Check your progress 12

Explain the three methods of costing

- Notes: (a) Write your answer in the space given below.
- (b) Check your answer with the ones given at the end of this Lesson (pp. 183-184).

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12.6 LET US SUM UP

Cost on element can be found at different levels. Cost at factory, administrative cost, selling and distribution cost. Direct cost can be calculated in order to know the cost at different levels for cost control purpose. Not only that cost can be classified into various ways namely cost by time, cost by function, cost by planning and control, cost by variability, cost by capital and revenue. Each and every classification has its own purpose. Costing method differ from industry to industry according to the nature of productive process.

12.7 LESSON END ACTIVITIES

- 1 Describe the different elements of cost.
- 2 What do you understand by 'overhead'?
- 3 Write short notes on:
 - a) Cost centre b) profit centre c) material d) labour

12.8 CHECK YOUR PROGRESS

Your answer may include in the following:

1 Job costing: It is also called specific order costing. It is adopted by industries where there is no standard product and each job or work order is different from the others.

2 Contract costing: It is also known as terminal costing. Basically, this method is similar to job costing. However, it is used where the job is big and spread over a long period of time.

3 Batch costing: It is an extension of job costing. A batch is a group of identical products. All the units in a particular batch are uniform in nature and size. Hence each batch is treated as a cost unit and costed separately.

4 Process costing: It is called continuous costing. In certain industries, the raw material passes through different processes before it takes the shape of a final product. In other words, the finished product of one process becomes the raw material for the subsequent process. Process costing is used in such industries.

5 Unit costing: This method is also known as single or output costing. It is suitable to industries where production is continuous and units are identical. The objective of this method is to ascertain the total cost as well as the cost per unit.

12.9 POINTS FOR DISCUSSION

- 1 Explain the methods of Costing.
- 2 Explain the different techniques of costing.

12.10 REFERENCES

1. Jain & Narang – Cost Accounting.
2. Nigma & Sharma – Cost Accounting.

LESSON 13 COST SHEET

Contents:

- 13.0 Aims and objectives**
- 13.1 Introduction**
- 13.2 Meaning and definition of cost sheet**
- 13.3 Purpose of cost sheet**
- 13.4 Specimen of cost sheet**
- 13.5 Cost sheet and production Account**
- 13.6 Cost sheet and production statement**
- 13.7 Treatment of stocks**
 - 13.7.1 Stocks of raw materials
 - 13.7.2 Stocks of work-in-progress
 - 13.7.3 Stocks of finished goods
- 13.8 Tenders and Quotations**
- 13.9 Important points to be remembered**
 - 13.9.1 Alternative terms are used for many items in cost sheet
 - 13.9.2 Valuation of Stocks of Finished Goods
 - 13.9.3 Sale of Material Scrap
 - 13.9.4 Items excluded from cost accounts
 - 13.9.5 Profit given as percentage of selling price
 - 13.9.6 Standard Assumptions
- 13.10 Let us Sum Up**
- 13.11 Lesson-End Activities**
- 13.12 Points for Discussion**
- 13.13 Check your Progress**
- 13.14 References**

13.0 AIMS AND OBJECTIVES

- i) To study the meaning and definition of cost sheet.
- ii) To understand the treatment of stocks.
- iii) To learn how to prepare cost sheet.
- iv) To know the tenders and quotations

13.1 INTRODUCTION

A cost sheet is a statement prepared to show the different elements of cost. Preparation of cost sheet is one of the functions of cost accounting.

13.2. MEANING AND DEFINITION OF COST SHEET

The expenses of a product are analysed under different heads in the form of statement. This statement is called cost sheet.

Walter & Bigg define, “The expenditure which has been incurred upon production for a period is extracted from the financial books and the store records, and set out in a memorandum or a statement. If this statement is confined to the disclosure of the cost of the units produced during the period, it is termed as a cost sheet”. In other words cost sheet is a statement showing the total cost under proper classification in a logical order.

13.3. PURPOSE OF COST SHEET

1. It provides details of total cost under logical classification.
2. It provides cost per unit in difference stages.
3. It helps in comparison and control of cost.
4. Cost sheet is helpful in estimation of cost for preparation of tender and quotations.
5. It acts as basis for fixation of selling price.

13.4. SPECIMEN OF COST SHEET

Cost Sheet for the period _____

		Production	Units
		Total Cost Rs.	Cost per unit Rs.
	Direct Material Consumed:		
	Opening stock		
Add:	Purchases		
Less:	Closing Stock	---	
	Cost of drawing	---	
	Direct Expenses	---	
	Primary Packing materials	---	
	PRIME COST		
Add:	Works / Factory overheads:	---	---
	Indirect Materials	---	
	Indirect Wages	---	
	Factory Rent and Rates	---	
	Factory Lighting and Heading	---	
	Power and Fuel	---	
	Repairs and Maintenance	---	
	Drawing Office Expenses	---	
	Research and Experiment cost	---	
	Depreciation of Factory Plant	---	
	Works Stationery	---	
	Insurance of factory	---	
	Works Manager's salary	---	
	WORKS COST/FACTORY COST/ MANUFACTURING COST		
Add:	Office and Administrative Overheads:	---	
	Office salaries	---	

	Office Rent and Rates	---	
	Lighting and Heating	---	
	Cleaning	---	
	Telephone and Postages	---	
	Printing and Stationery	---	
	Depreciation of office Furniture	---	
	Depreciation of office Equipment	---	
	Insurance	---	
	Legal Expenses	---	
	COST OF PRODUCTION	---	---
Add:	Selling and Distribution Overhead:	---	
	Advertising	---	
	Salesmen Salaries	---	
	Samples and Free gifts	---	
	Sales Office Rent	---	
	Sales Promotion Expenses	---	
	Packing and Demonstration	---	
	Showroom Rent and Rates	---	
	Commission	---	
	Traveling Rent and Rates	---	
	Warehouse Rent and Rates	---	
	Repair of Delivery vans	---	
	Carriage freight Outwards etc.	---	
	COST OF SALES	---	---

Prime cost: This is also called direct cost. It is the aggregate of direct materials direct labour and direct expenses, which are easily identifiable with the product.

Work cost: It consists of the total of all items of expenses incurred in the manufacturing of a product, viz., prime cost plus factory expenses. It is also known as factory cost or manufacturing cost.

Cost of Production: This includes work cost and administration expenses. Production is not deemed to be complete without the managerial and facilitating costs.

Cost of Sales: It represents cost of production plus selling and distribution cost incurred. Thus, the cost of sales is the aggregate of all the direct and indirect costs connected to the goods sold.

When profit is added to the cost of sales, sales can be found. Usually, selling prices are fixed on the basis of the cost of sales. It ensures that all the costs are recovered and any desired profit is also obtained.

13.5. COST SHEET AND PRODUCTION ACCOUNT

Cost sheet is a statement of total cost under different classifications of costs. The classification of cost is done on the basis of elements of cost, functions and behaviour of cost. The total cost in the form of cost of sales and cost per unit is revealed.

On the other hand, the cost, sales, and profits presented in the form of a ledger account is known as production account or manufacturing account. The debit side of the account is shown with opening stock, expenses and the credit side is shown with closing stock and sales. The balancing figure is either profit or loss.

13.6 COST SHEET AND PRODUCTION STATEMENT

The cost of output can be ascertained from the statement known as cost sheet. The items of various costs are extracted from financial books and presented in logical order. Thus, total cost of a cost centre or cost unit is shown in the cost sheet.

When sales, stocks and profits are included in the cost sheet it is called production statement. Bigg has defined it as “The expenditure which has been incurred upon production for a period is extracted from the financial books and stores records and set out in a memorandum statement. If the statement is confined in the disclosure of the cost of the units produced during the period it is termed as cost sheet, but where the statement records, cost, sales and profit it is usually known as production or output statement or account”. However the modern practice is to extend the cost sheet to show profit and sales also and call it “statement of cost and profit”.

13.7 TREATMENT OF STOCKS

13.7.1 Stocks of Raw materials

When opening stock of raw materials, purchase of raw materials and closing stock of raw materials are given, raw materials consumed can be calculated as follows:

			Rs.
	Opening stock of raw materials		xxx
Add:	Purchase of raw materials		xxx
Add:	Carriage inwards		xxx
Add:	Other direct materials used		xxx
Add:	Taxes and duties on the material purchased		xxx
			xxx
Less :	Closing stock of raw materials	xxx	
Less :	Sale of unsuitable raw materials	xxx	
Less :	Sale of scrap of raw materials	xxx	xxx
	Cost of raw materials consumed		xxx

13.7.2 Stock of Work – in – Progress

‘Work-in-progress’ means units of production on which work has been done but are not yet completely finished. Work-in-progress is valued on prime cost or works cost basis but the latter is preferred. The opening and closing work in-progress are adjusted as given below:

	Prime cost		Xxx
Add:	Factory overhead		Xxx
Add:	Opening work-in-progress		Xxx

Less:	Closing work-in-progress		Xxx
	Works cost		Xxx

13.7.3 Stock of Finished Goods

If opening and closing stocks of finished goods are given they are to be adjusted to find out cost of production of goods sold.

			Rs.
Add:	Cost of production		xxx
	Opening stock of finished goods		xxx
Less:			xxx
	Closing stock of finished goods		xxx
	Cost of production of goods sold		xxx

Specimen of Cost sheet, with inventories

Statement of Cost and Profit (with stocks)

	Particulars		Rs.	Rs.
Add:	Opening stock of direct materials		xxx	
	Purchase of direct materials		xxx	
	Expenses, taxes and duties on materials purchased		xxx	
Less:		xxx		
	Closing stock of direct materials	xxx		
	Direct material scrap sold	xxx	xxx	
	Cost of direct material consumed			xxx
	Direct wages			xxx
	Direct or chargeable expenses			xxx
	Prime cost			xxx
Add:	Factory overhead			xxx
Add:	Opening work-in-progress			xxx
Less:				xxx
	Closing work-in-progress			xxx
	Works cost (or) Factory cost			xxx
Add:	Administration overheads			xxx
	Cost of production			xxx
Add:	Opening stock of finished goods			xxx
Less:				xxx
	Closing stock of finished goods			xxx
	Cost of goods sold			xxx
Add:	Selling and distribution overheads			xxx
	cost of sales			xxx
Add:	Profit / Less: loss			xxx
	Sales			xxx

13.8 TENDERS AND QUOTATIONS

Frequently the manufacturers of consumer durables and capital goods are asked to quote the price at which they can supply their output. The price at which the items of output are offered for sale is known as 'tender' or 'quotation' price. The tender has to be prepared carefully since it may be accepted and goods have to be supplied in future at the quoted rate.

In order to prepare the tender the following items are to be analysed.

- | | |
|------------------------|---------------------|
| 1. Raw materials | 2. Direct labour. |
| 3. Chargeable expenses | 4. Works overhead |
| 5. Office overhead | 6. Selling overhead |
| 7. Estimated profits | |

Estimation of different elements of cost has to be made. The following are the accepted norms:

- (A) Direct material and direct labour cost is generally estimated on the basis of 'cost per unit' of preceding period, subject to fluctuations in the marked price of materials and labour rates:
- (B) Overhead is estimated on the basis of past experience as a percentage as given below:

$$1. \text{ Percentage of factory overheads to direct wages} = \frac{\text{Factory Overheads}}{\text{Direct Wages}} \times 100$$

$$2. \text{ Percentage of office overheads to works cost} = \frac{\text{Office overheads}}{\text{Works cost}} \times 100$$

3. Percentage of selling and distribution overheads to works cost

$$= \frac{\text{Selling and Distribution overheads}}{\text{Works cost}} \times 100$$

(Or)

The percentage may be calculated on cost of production

$$= \frac{\text{Selling and Distribution overheads}}{\text{Cost of production}} \times 100$$

The overhead percentages obtained on the basis of preceding period's cost sheet are used for the tender by giving due regard to likely changes anticipated.

(C) Estimation of Profit for a Tender or Quotation

Sometimes profit is given as percentage of cost. In that case profit for the tender is ascertained as given below:

$$\text{Profit} = \text{Cost of Sales} \times \frac{\text{Percentage of profit}}{100}$$

If profit is to ascertain as a percentage of selling price of the tender, the profit is to be calculated as given below:

$$\text{Profit} = \frac{\text{Cost of Sales} \times \text{Rate of profit sales}}{100 - \text{Rate percentage on sales}}$$

13.9 IMPORTANT POINTS TO BE REMEMBERED

13.9.1 Alternative terms are used for many items in cost sheet

The following are some of them:

- | | |
|----------------------------|--|
| a. Direct Labour | - Direct wages, Production wages,
Productive wages, Productive labour |
| b. Direct expenses | - Chargeable expenses |
| c. Overhead | - 'On-cost', 'Burden' |
| d. Factory overhead | - Works-overhead, production
overhead, manufacturing overhead |
| e. Factory cost | - Works cost, Manufacturing cost |
| f. Administrative overhead | - Office overhead |

13.9.2 Valuation of Stocks of Finished Goods

When details of units produced and sold are available, the closing stock of finished units can be valued at 'current cost of production'.

$$\text{Value of closing stock units} = \frac{\text{Cost of production}}{\text{Units produced}} \times \text{Closing stock units}$$

If value of opening stock units is not given, they can also be valued on the current cost basis, assuming that costs in the previous period were similar to the current period.

13.9.3 Sale of Material Scrap

It can direct material scrap and can be shown as a deduction from direct material cost. It may also be indirect material scrap in which case it has to be reduced from the factory overhead cost.

When there is no indication, either method can be followed by stating the assumption.

13.9.4 Items excluded from cost accounts

(a) Purely financial expenses and losses like interest on loans and debentures, loss on sale of investments and fixed assets, cash discount. (b) Provisions like provision for income tax, provision for doubtful debts. (c) Capital expenses and losses written off like goodwill, preliminary expenses, discount on issue of shares, etc. (d) Appropriations like dividends paid transfer to reserves.

13.9.5 Profit given as percentage of selling price

Usually profit is added to the cost of sales to ascertain the sale price. If profit percentage is given on sales, it must be converted to percentage on cost.

For example if profit is 20% on sale.

Sales is 100; profit 20 \therefore Cost = 100-20 = 80

$$\text{Profit to cost} \frac{20}{80} = \frac{1}{4} \text{ (or) } 25\%$$

13.9.6 Standard Assumptions

In the context of tenders or quotations, the following assumptions can be made if nothing contrary is given in the problem.

- (a) Factory overhead to direct wages ratio of the previous period holds good for current period also.

- (b) Administrative overhead to works cost ratio of the previous period is applicable in current period also.

Check your progress 13

Explain the following terms:

- (i) Prime cost (ii) Work cost (iii) Cost of production (iv) Cost of sales

- Notes: (a) Write your answer in the space given below.
 (b) Check your answer with the ones given at the end of this Lesson (pp.200).

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13.10 ILLUSTRATIONS

Illustration 1

Calculate Prime Cost, Factory Cost, Cost of Production, Cost of Sales and Profit from the following details:

Direct Materials	Rs. 10,000
Direct Labour	Rs. 4,000
Direct Expenses	Rs. 500
Factory Expenses	Rs. 1,500
Administrative Expenses	Rs. 1,000
Selling Expenses	Rs. 300
Sales	Rs. 20,000

Solution:

Prime Cost (Rs.14,500)	=	Direct Materials + Direct Labour + Direct Expens
	=	Rs. 10,000 + Rs. 4,000 + Rs.500
Works Cost (Rs.16,000)	=	Prime Cost + Factory Expenses
	=	Rs. 14,500 + Rs.1,500
Cost of Production (Rs.17,000)	=	Works Cost + Administrative Expenses
	=	Rs. 16,000 + Rs.1,000
Total Cost (Rs.17,300)	=	Cost of Production + Selling Expenses
	=	Rs.17,000 + Rs.300
Profit (Rs.2,700)	=	Sales – Total Cost
	=	Rs. 20,000 – Rs.17,300

Illustration 2

Draw a statement of cost form the following particulars:

Opening Stock:		Rs.
	1. Materials	2,00,000
	2. Work-in-progress	60,000
	3. Finished goods	5,000
Closing Stock:	1. Materials	1,80,000
	2. Work-in-progress	50,000
	3. Finished goods	15,000
Materials purchased		5,00,000
Direct Wages		1,50,000
Manufacturing expenses		1,00,000
Sales		8,00,000
Selling and distribution expenses		20,000

Solution**Statement of Cost**

		Rs.	Rs.
	Opening stock of materials	2,00,000	
Add:	Purchase of materials	5,00,000	
		7,00,000	
Less	Closing stock of materials	1,80,000	
	Materials consumed:		5,20,000
	Direct Wages		1,50,000
	Prime Cost		6,70,000
Add:	Manufacturing expenses		1,00,000
			7,70,000
Add:	Opening stock of work-in-progress		60,000
			8,30,000
Less:	Closing stock of work-in-progress		50,000
	COST OF PRODUCTION (work cost)		7,80,000

Statement of Profit

		Rs.
	Good manufacture	7,80,000
Add:	Opening stock of finished goods	5,000
		7,85,000
Less:	Closing stock of finished goods	15,000
		7,70,000
Add:	Selling and distribution expenses	20,000
	Total Cost	7,90,000
	Net Profit	10,000
	Sales	8,00,000

Illustration 3

The following data relate to the manufacture of a product during the month of January

Raw materials consumed Rs.80,000

Direct Wages Rs.48, 000

Machine hour worked 8,000
 Machine hour rate Rs.4
 Office overhead 10% of works cost
 Selling overhead Rs.1.50 Per unit
 Unit produced 4,000
 Units sold 3,600 at Rs.50 each.

Prepare cost sheet and show (a) cost per unit and (b) profit for the period.

Solution:

Cost sheet for January (output: 4,000 Units)

	Total Cost Rs.	Cost per Unit Rs.
Raw Materials	80,000	20,00
Direct Wages	48,000	12,00
Prime Cost	1,28,000	32,00
Factory Overhead (8,000 x Rs.4)	32,000	8,00
Works Cost	1,60,000	40.00
Office overhead (10% of work cost)	16,000	4.00
Cost of production	1,76,000	44.00

Statement of Profit (3,600 units sold)

	Rs.	Rs.
Cost of Production (3,600 x Rs.44)	1,58,400	44.00
Selling Overhead (3,600 x Rs.1.50)	5,400	1.50
Cost of Goods Sold	1,63,800	45.50
Profit	16,200	4.50
Sales (3,600 x Rs.50)	1,80,000	50.00

(a) Cost per unit = Rs.44 (b) Total Profit = Rs.16,200

Note: Cost Sheet discloses the total cost and the cost per unit during the given period.

Illustration 4

From the following particulars prepare a statement showing the components of the total sales and the profit for the year ended 31st December.

	Rs.
Stock of finished goods (1 st Jan.)	6,000
Stock of raw materials (1 st Jan.)	40,000
Work-in-progress (1 st Jan.)	15,000
Purchase of raw materials	4,75,000
Carriage inwards	12,500
Factory rent, taxes	7,250
Other production expenses	43,000
Stock of goods (31 st Dec.)	15,000
Wages	1,75,000
Work manager's salary	30,000
Factory employees' salary	60,000

Power expenses	9,500
General expenses	32,500
Sales for the year	8,60,000
Stock for the year	50,000
Work-in-progress (31 st Dec.)	10,000

Solution:**Cost Sheet for the year ending 31st Dec.**

		Rs.	Rs.
	Stock of raw materials on 1 st Jan.	40,000	
Add:	Purchase during the year	4,75,000	
		5,15,000	
Less:	Stock of materials on 31 st Dec.	50,000	
	Cost of materials consumed		4,65,000
Add:	Wages		1,75,000
	Carriage inwards		12,500
	Prime Cost		6,52,500
Add:	Factory on cost:		
	Works manager's salary	30,000	
	Factory employees' salary	60,000	
	Factory rent, taxes and insurance	7,250	
	Power expenses	9,500	
	Other production expenses	43,000	
Add:	Works-in-progress 1 st Jan.		1,49,750
			15,000
			1,64,750
Less:	Works-in-progress 31 st Dec.		10,000
	Factory Cost		1,54,750
Add:	Office on cost:		
	General expenses		8,07,250
			32,500
	Total Cost		8,39,750
Add:	Stock of finished goods 1 st Jan.		6,000
			8,45,750
Less:	Stock of Finished goods 31 st Dec.		15,000
	Cost of sales		8,30,750
	Profit		29,250
	Total sales		8,60,000

Illustration 5: On August 15, 2003 a manufacturer Sethu desired to quote for a contract for the supply of 500 radio sets. From the following details prepare a statement showing the price to be quoted to give the same percentage of net profit on turnover as was realized during 6 months ending on 30th June 2003:

	Rs.
Stock of materials as on 1 st Jan. 2003	20,000
Stock of materials as on 30 th June 2003	25,000
Purchases of materials during 6 months	1,50,000

Factory wages during 6 months	1,20,000
Indirect charges during 6 months	25,000
Opening stock of completed sets	Nil
Closing stock of completed sets	100
Sales during 6 months	3,24,000

The number of radio sets manufactured during these six months was 1450 sets including those sold and those stocked at the end of the period. The radios to be quoted are of uniform quality and size as were manufactured during the six months to 30th June 2003. As from August 1, the cost of factory labour has gone up by 10%.

Solution:

**Statement of cost and profit of Radio sets for six month
ending 30th June 2003**

Particulars	Rs	Per unit Rs
Opening stock of raw material	20,000	
(+) Purchases of material	150,000	
	170,000	
(-) Closing stock of material	25,000	
Material consumed	1,45,000	100
Factory wages	1,20,000	82.76
Prime cost	2,65,000	182.76
(+) Indirect wages	25,000	17.24
(+) Opening work-in-progress	-	
(-) Closing work-in-progress	-	
Work cost	2,90,000	200.00
(+) Administration overhead	-	
Cost of production	2,90,000	200.00
(+) Opening stock of finished goods	-	
(-) Closing stock of finished goods (100 x 200)	20,000	
Cost of goods sold	2,70,000	200
(+) Selling & Distribution overhead	-	
Cost of sales	2,70,000	200
Profit	54,000	40
Sales (1450-100)	324,000	240

Working Note

1. Profit on sales	:	$\frac{\text{Profit}}{\text{Sales}} \times 100$	$\frac{54000}{324000} \times 100$	16.66%
Profit on costs	:	$\frac{\text{Profit}}{\text{Cost}} \times 100$	$\frac{54000}{270000} \times 100$	20%
2. Factory wages	:	Per unit	82.76	
(+) 10% increase	:	$\left(82.76 \times \frac{10}{100}\right)$	8.28	
Wages per unit for quotation			91.04	

Statement showing quotation for 500 radio sales

Particulars	Total	Per unit
Materials	50,000	100.00
Factory wages	45,520	91.04
Prime cost	95,520	191.04
(+) Indirect changes	8,620	17.24
Cost of sales	1,04,140	208.28
Profit 20% on cost $104140 \times \frac{20}{100}$	20,828	41.66
sales	1,24,968	249.94

13.10 LET US SUM UP

Cost sheet shows the elements of cost at different levels. Work-in-progress at the beginning and at the end adjusted in factory cost. We can take cost as the base for preparing quotation for a job. Overheads are absorbed on the basis of the information given in cost sheet. Expenses and losses are purely financial nature, capital, expenses and less written off and appropriations are not taken into consideration while preparing cost sheet.

13.11 LESSON END ACTIVITIES

1. What is cost sheet?
2. What are the purposes of cost sheet?
3. What do you understand overhead?
4. Write short notes on:
 - (i) Prime cost
 - (ii) Work cost
 - (iii) Work-in-progress
 - (iv) Cost of production
 - (v) Cost of sales.
5. How are 'Tenders' prepared?
6. From the following information prepare a cost sheet for the month of January

	Rs.
Stock of raw materials on 1 st January	25,000
Stock of raw materials on 31 st January	26,200
Purchase of raw materials	21,900
Carriage on purchases	1,100
Sale of finished goods	72,300
Direct wages	17,200
Non-productive wages	800
Direct expenses	1,200
Factory overheads	8,300
Administrative overheads	3,200
Selling overheads	4,200

7. A factory produces 100 units of a commodity. The cost of production is:

	Rs.
Direct materials	10,000
Direct wages	5,000
Direct expenses	1,000
Factory overheads	6,500
Administrative overheads	3,480

If profit of 25% on sales is to be realized what would be the selling price of each unit of the commodity? Prepare the cost sheet.

8. The Sivika Co. Ltd. has received an enquiry for supply of 10,000 steel folding chairs. The costs are estimated as under:

Raw Materials	-	1,00,000 Kgs. at Rs.1 per Kg.
Direct Wages	-	10,000 hours at Rs.4 per hour.
Variable Overheads	:	Factory Rs.2.40 per labour hour Selling and Distribution Rs.16,000.
Fixed Overheads	:	Factory Rs.6,000 Selling and Distribution Rs.14,000

Prepare statement showing the price to be fixed which will result in a profit of 20 per cent on selling price.

9. The following information has been obtained from the records of Selvi Manufacturing Limited for the period from June 1, 1972 to June 30, 1992;

	Rs.
Cost of raw materials in stock as on 1 st June 1992	30,000
Raw materials purchased during the month	4,50,000
Wages paid	2,00,000
Wages Outstanding	30,000
Factory overheads	92,000
Work in progress as on 1.6.1992	12,000
Raw materials in stock as on 30.6.1992	25,000
Work in progress as on 30.6.1992	15,000
Opening stock of finished goods	60,000
Closing stock of finished goods	55,000
Selling and distribution overheads	20,000
Sales	9,00,000
Administration overheads	30,000

You are required to prepare a statement showing the cost of goods manufactured and cost of goods sold.

13.12 CHECK YOUR PROGRESS

Your answer is given below :

Prime cost: This is also called direct cost. It is the aggregate of direct materials direct labour and direct expenses, which are easily identifiable with the product.

Work cost: It consists of the total of all items of expenses incurred in the manufacturing of a product, viz., prime cost plus factory expenses. It is also known as factory cost or manufacturing cost.

Cost of Production: This includes work cost and administration expenses. Production is not deemed to be complete without the managerial and facilitating costs.

Cost of Sales: It represents cost of production plus selling and distribution cost incurred. Thus, the cost of sales is the aggregate of all the direct and indirect costs connected to the goods sold.

13.13 POINTS FOR DISCUSSION

1. Explain the treatment of stock.
2. How to prepare a cost sheet.

13.14 REFERENCES

1. Nigam and Sharma – Cost Accounting.
2. Jain & Narang – Cost Accountancy.

LESSON 14 STORE CONTROL

Contents:

- 14.0 Aims and objectives**
- 14.1 Introduction**
- 14.2 Meaning and Types of Store**
 - 14.2.1 Centralised stores
 - 14.2.2 Decentralised stores
 - 14.2.3 Central stores with sub stores
- 14.3 Store Keeper**
 - 14.3.1 Functions of stores keeper
- 14.4 Classification and Codification**
 - 14.4.1 Types of Coding
- 14.5 Store or Material control**
 - 14.5.1 Objectives of Store control
 - 14.5.2 Essential of Store control
 - 14.5.3 Advantages of Store control
- 14.6 Inventory turnover**
 - 14.6.1 Input-output Ratio
- 14.7 ABC Analysis and VED Analysis**
- 14.8 Inventory system**
 - 14.8.1 Periodical Inventory system
 - 14.8.2 Perpetual Inventory system
- 14.9 Fixation of store level**
 - 14.9.1 Re order level
 - 14.9.2 Maximum level
 - 14.9.3 Minimum level
 - 14.9.4 Average stock level
- 14.10 Economic Order Quantity**
- 14.11 Illustrations**
- 14.12 Let us Sum Up**
- 14.13 Lesson-End Activities**
- 14.14 Check your Progress**
- 14.15 Points for Discussion**
- 14.16 References**

14.0 AIMS AND OBJECTIVES

- i) To study the meaning of stores and types of stores.
- ii) To know the store keeper, classification and codification.
- iii) To understand the store control and inventory control.
- iv) To study inventory turnover, ABC analysis and VED analysis.
- v) To study the fixation of stock levels and Economic order Quantity.

14.1 Introduction

Store is a place where the various items of materials are kept safely till they are issued for production. Every manufacturing concern maintains a store under the control of a person called storekeeper. The store department acts as a link between the purchasing department and production department. The materials required for the production will be issued from the store as and when it is needed.

14.2 Meaning and Types of Store

Store is a place where the various items of materials are kept safely till they are issued for production is called store.

Types of stores: The following are the three types of stores:

- i) Centralized stores.
- ii) Decentralized stores.
- iii) Central stores with sub-stores.

14.2.1 Centralised Stores

The usual practice in most of the concerns is to have a central store. In case of such a store, materials are received by and issued from one stores department. All materials are kept at one central store.

14.2.2 Decentralised Stores

Under this type of stores, independent stores are situated in various departments. Handling of stores is undertaken by the storekeeper in each department. The departments requiring stores can draw from their respective stores situated in their department. The disadvantages of centralized stores can be eliminated if there are decentralized stores. Such type of stores set up to meet the requirements of materials of each production department are not very popular because of the heavy expenditure involved.

14.2.3 Central Stores with Sub-stores

In large factories, departments are situated at a distance from the central store; so in order to keep the transportation costs and handling charges to minimum, sub-stores (in addition to the central stores near the Receiving Department) should be situated near production departments. For each item of materials, a quantity is determined and this should be kept in stock in sub-store at the beginning of any period. At the end of a period the storekeeper of each sub-store will requisition from the central stores the quantity of the material consumed to bring the stock up to the predetermined quantity. In short, this types of stores operates in a similar way to a petty cash system; so this system of stores is also known as the Imprest system of stores control.

To conclude, the ideal course for a large factory to overcome the disadvantages of centralized and decentralized stores is to have central stores with sub-stores.

14.3 STORE KEEPER

All manufacturing concerns appoint a person known as the Storekeeper, Chief Storekeeper or the Stores Superintendent who is in charge of the stores department and is responsible for stores control. The storekeeper should have technical knowledge and wide experience in stores routine and ability of organizing the operations of the stores. He should be a man of undoubted integrity.

14.3.1 Functions of Store Keeper

The cost of raw materials is the largest elements of cost. Therefore it is imperative that utmost importance should be given to storekeeping. The main functions of the storekeeper are as follows:

- i) He must receive the materials, store them properly according to the goods inspection report or the invoice.
- ii) Materials are classified according to the nature, size, shape, price, etc. He must place them in definite places (racks or bins) and number them for easy identification.
- iii) He must initiate the purchase requisition when the material reaches the ordering level.
- iv) He should not allow unauthorized persons to enter the store room.
- v) He must maintain stock registers, entering therein all receipts, issues and balances.
- vi) He should issue materials only upon written material requisition duly signed by an authorized person.
- vii) All items must be entered in the bin cards and this must be tallied with ledger balances.

14.4 CLASSIFICATION AND CODIFICATION

For an efficient store keeping, proper classification and codification of materials is essential. Materials are to be classified on the basis of their nature and they may be further classified on the basis of type, shape, colour, etc. Once the materials are classified they are to be allotted codes which will be helpful for easy identification. Codes are usually short symbols which replace the longer names of the materials.

14.4.1 Types of coding

The following are the important types of coding

i) Alphabetical method: An alphabet is allotted to each item of stores. For example 'A' for nut, 'B' for bolt, etc. This system is not flexible. If the organization is large, where there are number of items of stores, this method is not suitable.

ii) Mnemonic: It is an improvement over the alphabetical method. In this method, the first sound of the name is considered for each material. For example Petrol can be 'PT', Diesel as 'DS', Kerosine as 'KS', etc. The material can be easily traced without referring to index.

iii) Numerical Method: A number is allotted to each material for example 01, 02, 03, 04 and so on. When large numbers of items are there, this method is suitable. There are two types of numbering – Straight numbering and Block numbering.

iv) Alphabetical-cum-Numerical method: In this method, alphabet and numerals are used in combination. For example, Steelwire-1 "SW1, Copper wire2"- CW2, brasswire 1"- BW1 etc.

v) Standardization and Simplification: Standardization and simplification aim at inventory control by reducing the number of varieties of materials stocked in stores. For each item in store, specifications are allotted. This will facilitate buying of correct materials as it makes it clear to the buyer and seller the correct material are required. The specifications ensure that material of correct quality is used in production to maintain the required quality of finished output.

Standardization is made easier, since the help of Indian Standard Institute (ISI), International Organization for Standardization (ISO) and other specialized agencies may be taken for standardization of stores.

Simplifications is a corollary of standardization and aims at minimizing the number of items carried in the stores so that carrying cost and investments in materials may be reduced.

14.5 STORE OR MATERIAL CONTROL

Store control aims at achieving savings in material cost, improvement in material handling, increased production and avoidance of over investment or under investment in inventories. The important objectives of material control are:

14.5.1 Objectives of store control:

The following are the important objectives of store control

- a. to make available the right type of raw material at the right time in order to have smooth and continuous flow of production;
- b. to ensure effective utilization of material;
- c. to prevent over stocking of materials and consequent locking up of working capital;
- d. to procure appropriate quality of raw materials at reasonable price;
- e. to prevent losses during storage of materials;
- f. to supply information to the management regarding the cost of materials and the availability of stock;

14.5.2. Essential of store control:

The following are the essentials of good system of material control.

- a. There should be proper co-operation and co-ordination among the departments dealing with materials.
- b. All purchases must be centralized and must be made through an expert purchase manager.
- c. All items in the stores should be classified with codes.
- d. Receiving and inspection procedure should be chalked out.
- e. Ideal storage and preservation facilities will have to be provide.
- f. Stores control measures like ABC analysis, perpetual inventory system, stock verification should be introduced.
- g. There should be an efficient system of internal audit and internal check.
- h. Maximum level, minimum level and re-order level of stock should be fixed to avoid over-stocking or shortage of materials.
- i. Appropriate records should be maintained to control issues and utilization of stores in production.
- j. There should be a system of regular reporting to management regarding materials purchases, storage and utilization.

14.5.3. Advantages of store control:

The following are the main advantages of store control:

- a. It helps to eliminate or minimize waste through control of purchases, storage and issue of materials.
- b. It facilitates detection and elimination of fraud and pilferage by implementing stock control measures.

- c. It facilitates maintenance of stocks at appropriate levels so that production is not stopped for want of materials. Thus, it prevents production delays.
- d. It ensures up-to-date maintenance of stock records.
- e. It avoids over investment in inventories.
- f. It facilitates preparation of accurate monthly financial statements required for various management information reports.
- g. It furnishes quickly and accurately the value of materials and supplies used in various departments.

14.6 INVENTORY TURNOVER

Kohler defines inventory turnover ratio as “a ratio which measures the number of times a firm’s average inventory is sold during a year”, In his view the ratio is an indicator of a firm’s inventory management efficiency. A high inventory turn over ratio indicates fast movement of material. A low ratio on the other hand indicates over investment and blocking up of working capital.

The Inventory turnover is calculated on the sales or cost of sales. It is measured in terms of value of materials consumed to the average inventory during a period. It indicates number of times the inventory is consumed and replenished. If the number of days in a year is divided by turn over ration, the number of days for which the average inventory is held can be ascertained.

The turnover ratio differs from industry to industry. On the basis of the ratio, a decision is made to reduce investment on slow moving materials and stop over stocking of undesirables material.

$$(i) \text{ Inventory Turnover Ratio} = \frac{\text{Cost of Materials Consumed}}{\text{Cost of Average Stock}}$$

$$(ii) \text{ Average Stock} = \frac{\text{Opening Stock of Material} + \text{Closing stock of Material}}{2}$$

$$(iii) \text{ Inventory Turnover in days} = \frac{\text{Days in the period}}{\text{Inventory Turnover Ratio}}$$

14.6.1. Input-output-Ratio

This is yet another method of inventory control. Input output ratio is the ratio of the quantity of material to production and standard material content of the actual output. This is possible in industries where the product and raw material are being expressed in same quantitative measurement such as kilograms, Metric tonnes, etc.

The Input-output ratio analysis indicates whether the consumption of actual material when compared with standards is favorable or adverse. The raw material cost of the finished product can be arrived at by multiplying material cost per unit by the input-output ratio.

The ratio is obtained as given below:

$$\frac{\text{Standard cost of Actual quantity}}{\text{Standard cost of Standard quantity}}$$

14.7. ABC ANALYSIS AND VED ANALYSIS

ABC analysis

It is 'Management by exception' system of Inventory control. In this Always Better Control (ABC) technique of inventory control, the materials are classified and controlled according to value of the materials involved. It is also called proportional parts value analysis. Thus, high value items are paid more attention than low value items. The materials are classified under 'A', 'B' or 'C' designation on the basis of their value and importance.

'A' category consists of a few items of high value. Category 'B' includes more items of medium value and category 'C' includes all other materials of small value.

The general classification of items under ABC categories are as given below:

Category	Percentage of total items	Percentage of total material cost
A	5 to 10	70-80
B	10 to 20	10-20
C	70 to 80	5-10

From the above classification, it is clear that 'A' items are of minimum quantity and of maximum value out of total quantity and value of materials. They have to be controlled to the fullest possible extend by all methods of inventory control from the time of purchase till they are consumed in production. 'B' and 'C' items are of major portion of total quantity of raw materials but having minimum capital investment. Therefore, they are to be managed through less stringent controls.

Advantages

1. Effective control is applied on the high value items rather than concentrating on all items. This results in reduction in value of material losses.
2. Optimum investment in materials as minimum required quantity of 'A' items with high value are purchased.
3. Storage cost is kept at minimum amount as high value materials representing minimum quantity are kept in stores.

VED analysis

It is a device intended for control of spare parts. On the basis of the relative importance, spare parts may be classified into 3 category viz., V for vital, E for essential and D for desirable. 'Vital' spare parts are those whose non availability may lead to stoppage of production. Therefore every effort should be taken to ensure the availability of these spare parts at any time. Production may not be interrupted due to the non-availability of 'Essential' spares for one hour or one day, beyond which production will be stopped and thus these items are very essential. 'Desirable' spare parts are those spares which are needed but their absence for a week or so may not lead to stoppage of production.

14.8 INVENTORY SYSTEM

Inventory means stock. Every manufacturing concern has to maintain proper and accurate records regarding the quantity and value of inventory in hand. The records may be maintained according to any one of the following two systems.

14.8.1. Periodical inventory system

Under this system, stocks are verified only at the end of the accounting period, usually a year. Periodic inventory system has the following disadvantages.

- a. Business or production has to be stopped during the period of stock-taking. This will result in loss of revenue to the firm.
- b. Physical verification of stock is time consuming and tedious.
- c. Stock verifiers are not experts in stock-taking. So, verification cannot be perfect.
- d. The element of surprise check which is essential for effective control is completely absent.
- e. Stock discrepancies are not detected till the end of the accounting period.

The system of continuous stock-taking overcomes the disadvantages of periodic stock-taking.

14.8.2 Perpetual inventory system:

This system is also known as “Automatic Inventory System”. It is an important aid to material control. Its main object is to make available detail about the quantity and value of stock of each item, at all times. It consists of maintaining records for each type of material, showing the quantities and value of material received, issued and is stock. It also covers continuous stock-taking.

Definition: The Institute of Cost and Management Accounts (ICMA) London defines the perpetual inventory as, “a system of records maintained by the controlling departments, which reflects the physical movements of stocks and their current balance”.

14.9 FIXATION OF STOCK LEVELS

The object of fixing stock levels for each item of material is to maintain required quantity of materials in the store and thereby the expenses may be reduced. The different stock levels are: (1) Minimum stock level (2) Maximum stock level (3) Reorder stock level (4) Average stock level.

14.9.1. Reorder stock level: It is the point at which the storekeeper should initiate purchase requisition for fresh supply. This level lies between the maximum level and the minimum level. The re-ordering point is fixed slightly higher than the minimum stocks in such a way that the difference between minimum level and re-ordering level is sufficient to meet the demand for production up to the time of fresh supply. The level depends upon the lead time, rate of consumption and Economic order quantity (EOQ).

Formula:

Re-order level of ordering level = Minimum level + consumption during the time required to get fresh supply

Or

Maximum consumption x Maximum re-order period

14.9.2. Maximum stock level

It is the stock level above which stock should not be allowed to rise. This is the maximum quantity of stock of raw materials which can be had in the stock. It is goes above, it will be overstocking.

The demerits are:

1. Capital is blocked
2. More space is needed
3. Deterioration of stocks is possible
4. There will be loss due to obsolescence
5. There is the danger of depreciation in value

The maximum level is fixed by taking into account the following factors:

1. Availability of capital
2. Space available in stores
3. Rate of consumption
4. Re-order level
5. Delivery time to obtain fresh stock
6. Changes in price
7. Cost of maintaining the stock
8. Possibility of change in fashion
9. Seasonal nature of supply
10. Restriction imposed by goods
11. Economic order quantity (EOQ)

Formula:

**Maximum stock level = Re-order level + Re-ordering quantity -
(Minimum consumption x Minimum re-order period)**

14.9.3. Minimum stock level

It represents the minimum quantity of an item of material to be kept in the store at any time. Material should not be allowed to fall below this level. If the stock goes below this level, production may be held up for want of materials. This stock is also known as safety stock level or buffer stock. In determining the minimum level the following factors are to be considered.

1. Lead time ie. Time required for getting fresh delivery of material.
2. Rate of consumption of material during the lead time.
3. Availability of substitute and re-order level

Formula:

Minimum stock level = Reorder level - (Normal consumption x Normal reorder period)

14.9.4. Average stock level:

This stock level shows the average quantity of materials kept in the store. This is regarded as the average of maximum and minimum stock levels.

Formula:

$$\text{Average stock level} = \frac{\text{Maximum level} + \text{Minimum level}}{2}$$

If maximum stock level is not available.

$$\text{Average stock level} = \text{Minimum level} + \frac{1}{2} \text{ Reorder quantity}$$

14.10 ECONOMIC ORDER QUANTITY [EOQ]

Economic ordering quantity depends on many factors like cost of purchasing and receiving, normal consumption, interest on capital, availability of storage accommodation, ordering and carrying costs. Economic ordering quantity is the reorder quantity, which is the quantity to be purchased each time an order is placed.

When the purchase price remains constants, the economic ordering quantity will be determined based on the following formula:

$$EOQ = \sqrt{\frac{2AB}{CS}}$$

Where

EOQ = Economic Ordering Quantity

A = Annual consumption or usage of material in units.

B = Buying cost per order.

C = Cost per unit.

S = Storage and carrying cost per annum.

Check your progress 14

What you understand about ABC analysis

Notes: (a) Write your answer in the space given below.

(b) Check your answer with the ones given at the end of this Lesson (pp. 215).

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

14.11 ILLUSTRATIONS

Illustration 1

The following information is relating to a material for the year ended 1998. The value of material is Re.1 per Kg.

Opening Stock	800 Kg.
Purchases	12,000 Kg.
Closing Stock	400 Kg.

Calculate the material turnover ratio and express in number of days the average inventory held.

Solution:

$$\text{Inventory turnover ratio or Material Turnover Ratio} = \frac{\text{Cost of Material Consumed}}{\text{Average value of Material in stock}}$$

$$\begin{aligned} \text{Cost of Material Consumed} &= \text{Opening Stock of Material} + \text{Purchase of Material} - \\ &\quad \text{Closing stock of Material} \\ &= 800 + 12,000 - 400 \\ &= \text{Rs. } 12,400 \end{aligned}$$

$$\begin{aligned} \text{Average value of Material} &= \frac{\text{Opening Stock of Material} + \text{Closing Stock of Material}}{2} \\ &= \frac{800 + 400}{2} = \text{Rs. } 600 \end{aligned}$$

$$\text{Material or Inventory turnover ratio} = \frac{12,400}{600} = 20.67 \text{ times}$$

$$\begin{aligned} \text{Inventory of Material Turnover in Days} &= \frac{\text{Days during the period}}{\text{Material of Inventory turnover ratio}} \\ &= \frac{365 \text{ days}}{20.67} \\ &= 17.65 \text{ days (or) } 18 \text{ days} \end{aligned}$$

Illustration 2

Find out the economic order quantity and the number of orders per year from the following information:

Monthly consumption 3,000 units

Cost per unit Rs.54

Ordering cost Rs.150 per order.

Inventory carrying cost 20 % of the average inventory.

Solution:

$$\text{Annual consumption} = 3,000 \times 12 = 36,000 \text{ units}$$

$$\text{EOQ} = \sqrt{\frac{2AB}{CS}}$$

Where

A = Annual usage of Material

B = Buying cost per order

C = Cost per unit

S = Storage and carrying cost per unit

$$EOQ = \sqrt{\frac{2 \times 36,000 \times 150}{54 \times \frac{20}{100}}} = \frac{10,00,000}{100}$$

= 1,000 units.

$$\text{Number of orders per day} = \frac{36,000}{1,000} = 36$$

Illustration 3

Two components X and Y are used as follows:

Minimum usage	:	50 units per week each.
Maximum usage	:	150 units per week each
Normal usage	:	100 units per week each
Ordering quantities	:	X – 600 units Y- 1,000 units
Delivery period	:	X – 4 to 6 weeks. Y – 2 to weeks.

Maximum reorder period for emergency purchases X: 2 weeks Y: 2 weeks

Calculate for each component:

- Recording level
- Maximum level
- Minimum level

Solution

The terms 'Delivery period', 'Reorder period', 'Lead time', 'Time lag', etc., are used interchangeably. Similar is the case with the terms 'usage' and 'Consumptions'.

(a) Re-order level = Maximum consumption x Maximum reorder period

$$\text{Component X} = 150 \text{ units} \times 6 \text{ weeks} = 900 \text{ units}$$

$$\text{Component Y} = 150 \text{ units} \times 4 \text{ weeks} = 600 \text{ units}$$

(b) Maximum level = Reorder level + Reorder Quantity – (Minimum Consumption x Minimum reorder period)

$$\begin{aligned}\text{Component X} &= 900 \text{ Units} + 600 \text{ units} - (50 \text{ units} \times 4 \text{ weeks}) \\ &= 1,500 - 200 = 1,300 \text{ units.}\end{aligned}$$

$$\begin{aligned}\text{Component Y} &= 600 \text{ units} + 1,000 \text{ units} - (50 \text{ units} \times 2 \text{ weeks}) \\ &= 1,600 - 100 = 1,500 \text{ units}\end{aligned}$$

(c) Minimum stock level = Reorder level – (Normal consumption x Normal Reorder period)

$$\begin{aligned}\text{Component X} &= 900 \text{ units} - (100 \text{ units} \times \frac{4+6}{2} \text{ weeks}) \\ &= 900 - 500 = 400 \text{ units}\end{aligned}$$

$$\begin{aligned}\text{Component Y} &= 600 \text{ units} - (100 \text{ units} \times \frac{2+4}{2} \text{ weeks}) \\ &= 600 - 300 = 300 \text{ units}\end{aligned}$$

Illustration 4

Two components A and B are used as follows:

Reordering quantity	:	A 1,200 units
		B 1,000 units
Reordering period		A 2 to 4 weeks
		B 3 to 6 weeks
Normal usage	-	300 units per week each.
Minimum usage	-	150 units per week each
Maximum usage	-	450 units per week each

You are required to calculate the following for each of the components.

(a) Reordering level (b) Maximum level (c) Minimum level (d) Average stock level.

Solution:

Component A:

$$\begin{aligned}\text{(a) Reordering level} &= \text{Maximum consumption} \times \text{Maximum reorder period} \\ &= 450 \times 4 = 1,800 \text{ units}\end{aligned}$$

$$\begin{aligned}\text{(b) Maximum stock level} &= \text{Reorder level} + \text{Reordering quantity} - \\ &\quad (\text{Minimum consumption} \times \text{minimum reorder period}) \\ &= 1,800 + 1,200 - (150 \times 2) \\ &= 2,700 \text{ units}\end{aligned}$$

$$\begin{aligned}
 \text{(c) Minimum stock level} &= \text{Reorder level} - (\text{Normal consumption} \times \\
 &\quad \text{Normal reorder period}) \\
 &= 1,800 - (300 \times 3) \\
 &= 900 \text{ units}
 \end{aligned}$$

$$\text{(d) Average stock level} = \text{Minimum stock level} + \frac{1}{2} \text{ of reorder quantity}$$

$$\begin{aligned}
 &= 900 + \left[\frac{1}{2} \times 1,200 \right] \\
 &= 900 + 600 = 1,500 \text{ units.}
 \end{aligned}$$

$$\begin{aligned}
 &= \frac{\text{Minimum level} + \text{Maximum level}}{2} \\
 &= \frac{900 + 2,700}{2} \\
 &= 1,800 \text{ units}
 \end{aligned}$$

Components B:

$$\begin{aligned}
 \text{Reordering level} &= \text{Maximum consumption} \times \text{Maximum reorder Period} \\
 &= 450 \times 6 = 2,700 \text{ units}
 \end{aligned}$$

$$\begin{aligned}
 \text{Maximum stock level} &= \text{Reorder level} + \text{Reorder quantity} - (\text{Minimum} \\
 &\quad \text{Consumption} \times \text{minimum reorder period}) \\
 &= 2,700 + 1,000 - (150 \times 3) \\
 &= 3,400 \text{ units}
 \end{aligned}$$

$$\begin{aligned}
 \text{Minimum stock level} &= \text{Reorder level} - (\text{Normal consumption} \times \text{Normal} \\
 &\quad \text{Reorder period}) \\
 &= 2700 - (300 \times 4.5) \\
 &= 1,350 \text{ units}
 \end{aligned}$$

$$\begin{aligned}
 \text{Average stock level} &= \frac{\text{Minimum level} + \text{Maximum level}}{2} \\
 &= \frac{3,400 + 1,350}{2}
 \end{aligned}$$

$$= 2,375 \text{ Units}$$

(Or)

$$\frac{1}{2}$$

$$\begin{aligned}
 &= \text{Minimum stock level} + \quad \text{of reorder quantity} \\
 &= 1,350 + \left(\frac{1}{2} \times 1,000 \right) \\
 &= 1,850
 \end{aligned}$$

Note: Average stock level differs when the alternative formulae are used.

14.12 LET US SUM UPS

Store is a place where raw materials are presented on order to maintain its quality. Under this control of store keeper, materials are kept safely up to utilisation. Materials are classified and coded and kept in bins. Excessive investment in inventory and shortage of raw materials must be avoided. For that purpose minimum level and maximum level of inventory is fixed. In order to reduce carrying and ordering cost, economic ordering level is calculated and orders made accordingly. Minimum level of stock always to be maintained. So re-order level is fixed that minimum and maximum level.

14.13 LESSON END ACTIVITIES

1. What is 'inventory control'? What its importance?
2. What do you understand by 'Classification' and 'Codification' of materials?
3. What is EOQ? What is its significance?
4. What is 'ABC Analysis'?
5. What is perpetual inventory system? Explain its procedure.
6. What is inventory turnover ratio?
7. Write short notes on: i) Maximum level ii) Minimum level
iii) Re order level iv) Average stock level.

14.14 CHECK YOUR PROGRESS

Your answer the following:

ABC analysis is 'Management by exception' system of Inventory control. In this Always Better Control (ABC) technique of inventory control, the materials are classified and controlled according to value of the materials involved. It is also called proportional parts value analysis. Thus, high value items are paid more attention than low value items. The materials are classified under 'A', 'B' or 'C' designation on the basis of their value and importance.

'A' category consists of a few items of high value. Category 'B' includes more items of medium value and category 'C' includes all other materials of small value.

14.15 POINTS FOR DISCUSSION

1. From the following figures calculate the inventory turnover ratio.

Stock as on 1st Jan. 2001	25,000
Stock as on 31st Dec. 2001	35,000
Purchases during 2001	2,50,000

2. Calculate the economic order quantity from the following particulars.

Annual usage	20,000 units
Buying cost per order	Rs.10
Cost per unit	Rs.100
Cost of carrying inventory	10% of cost

3. Calculate Minimum stock level, Maximum stock level and Re-ordering level from the following details:

(i) Minimum consumption	-	100	Units per day
(ii) Maximum consumption	-	150	Units per day
(iii) Normal consumption	-	120	Units per day
(iv) Re-order period	-	10-15	days
(v) Reorder quantity	-	1,500	Units.
(vi) Normal reorder period	-	12	days

4. Two components X and Y are used as follows;

Normal usage	:	4,500 units per week each
Minimum usage	:	2,250 units per week each
Maximum usage	:	6,750 units per week each
Recorder quantity	:	
		X = 19,500 units
		Y = 21,000 units

Record period

X= 3 to 5 week

Y=2 to 4 week

Calculate for each of the components :

- (a) Reorder level (b) Minimum level (c) Maximum level
(d) Average stock level

14.16 REFERENCES

1. Jain & Narang – Cost Accountancy.
2. Nigam & Sharma – Cost Accountancy.

LESSON 15 STORES LEDGER

Contents:

- 15.0 Aims and objectives**
- 15.1 Introduction**
- 15.2 Store ledger Specimen**
- 15.3 BIN card**
 - 15.3.1 Difference between store ledger and Bin card
- 15.4 Issue of material**
 - 15.4.1 Material requisition
 - 15.4.2 Bill of material
- 15.5 Treatment of surplus material**
 - 15.5.1 Return of surplus Material
 - 15.5.2 Transfer of surplus Material
- 15.6 Methods of pricing of material**
 - 15.6.1 First in First out method [FIFO]
 - 15.6.2 Last in First out method [LIFO]
 - 15.6.3 Simple Average method
 - 15.6.4 Weighted Average method
- 15.7 Material losses and Types**
 - 15.7.1 Waste
 - 15.7.2 Scrap
 - 15.7.3 Spoilage
 - 15.7.4 Defectives
 - 15.7.5 Obsolete, Slow moving and Dormant Stocks
- 15.8 Let us Sum Up**
- 15.9 Lesson-End Activities**
- 15.10 Check your Progress**
- 15.11 Points for Discussion**
- 15.12 References**

15.0 AIMS AND OBJECTIVES

- i) To know the store ledger and Bin card
- ii) To understand the issue of material and treatment of surplus material.
- iii) To study the different methods of pricing of material and material losses.

15.1 INTRODUCTION

Store ledger is another stores record kept in the costing department. It is a document showing the quantity and value of materials received, issued and in balance at the end. One stores ledger is allotted to each component of material. Entries are made in this ledger by the costing clerk with reference to goods received note, material requisition note, material returned note etc. It is very similar to the bin card except it contains additional columns showing the prices and value of materials received, issued and balance in hand. It gives the value of closing stock at any time.

Besides, a store ledger contain information like name of the material, code number, different stock levels etc.

15.2 STORE LEDGER SPECIMEN

Store Ledger

Material	:	Maximum level	:
Description	:	Minimum level	:
Bin No.	:	Reorder level	:
Sl.Folio	:	Reordering quantity	:

	Receipts			Issues			Balance				
Date	G.R.N. No.	Quantity	Rate	Amount (Rs.)	M.R.No.	Quantity	Rate	Amount (Rs.)	Quantity	Rate	Amount (Rs.)

15.3 BIN CARD

Bin is a place where materials are kept in. It may be a rack, container, shelf or space where stores are kept. Bin card is a document showing the particulars of materials kept in the bin. It is a document attached to the bin disclosing the quantitative details of materials received, issued and the closing balance. A bin card is used for each item of material. Each receipt and issue is recorded on the bin card in a chronological order and the latest balance is shown after each receipt and issue.

Bin card is maintained by the store keeper. It indicates information like different stock levels. No, name of material, material code number, stores ledger folio number, quantity of materials received, issued and the balance in hand.

Specimen

Bin Card

Material	:	Maximum level	:
Description	:	Minimum level	:
Bin No.	:	Reorder level	:
Sl.Folio	:	Reordering quantity	:

	Receipts		Issues		Balance Qty.	Remarks
Date	G.R. Note No.	Qty.	M.R. Note No.	Qty.		

15.3.1 Difference between Store Ledger and Bin Card

	Store Ledger	Bin Card
1.	It is a record of both quantity and value.	It is a record of quantity only.
2.	It is maintained by the cost clerk.	It is maintained by the storekeeper.
3.	It is kept in the cost office.	It is attached to the bin.
4.	Entries are made by the cost clerk.	Entries are made by the store keeper.
5.	Entries are made on the basis of documents like goods received note, material requisition note etc.	Entries are made on the basis of actual quantity received and issued.
6.	Posting are made after the transactions.	Postings are made before the transactions.
7.	Transactions are periodically recorded.	Individual transactions are recorded.
8.	Inter departmental transactions are recorded for costing purpose.	Inter departmental transfers are not shown.
9.	Facilitates physical verification of closing stock.	Facilitates physical verification of closing stock.

15.4 ISSUE OF MATERIAL

Materials are kept in stores so that the storekeeper may issue them whenever these are required by the production departments. But a storekeeper must not issue materials unless a properly authorised material requisition is presented to him.

15.4.1 Material Requisition

The storekeeper should always issue the material on proper authority to avoid the misappropriation of material. This authority is usually given by the foreman of the production department on a form known as material requisition.

15.4.2 Bill of Material

A bill of materials gives a complete list of all materials required with quantities for a particular job, order or process. Thus, all materials required for a particular job, order or process are listed by the production department on a single document. This bill serves the purpose of material requisition and all materials listed on the bill are sent to the production department. A bill of materials should be prepared if the job is of non-standardised nature so that reasonable estimate of all materials required may be made by the production department before the job is started.

15.5 TREATMENT OF SURPLUS MATERIALS

15.5.1 Return of Surplus Material:

Sometimes, excess materials may be issued to production departments. When these materials are returned to stores a Material Return Note is to be prepared by the department which has the excess materials. Generally, three copies are prepared. One

copy is retained by the department which is returning the material. Two copies are sent to the store keeper. The store keeper keeps one copy for making entries in the Bin card and the second copy is sent to the cost office for making entries in the stores ledger and for giving credit to the job where the material is in excess.

15.5.2 Transfer of Surplus Materials

Transfer of excess material from one job to another job is to be avoided as far as possible. This is because record for transfer may not be made and actual material cost of jobs may be inaccurate. However, sometimes the material may be allowed to be transferred to avoid delays and handling charges. The transfer is to be allowed only with preparation of material transfer note so that the cost of material transferred is debited to the job receiving the material and credited to the job transferring the material.

15.6 METHODS OF PRICING OF MATERIAL

A number of methods are used for pricing material issues. Each method has its own advantages and disadvantages. As such, it is impossible to say which method is the best. Each organisation should choose a particular method best suited to it. While choosing a method, it is necessary to see that the method chosen is simple, effective and realistic. At the same time, it is equally necessary to consider the effect of the method on production cost and inventory valuation.

The following are the different methods of pricing the material issues:

15.6.1. First In First Out Method (FIFO)

Under this method, materials are issued in the order in which they are received in the store. It means that the material received first will be issued first.

Advantages:

- a. This method is simple to understand and easy to operate.
- b. The closing stock is valued at the current market price.
- c. Since issues are priced at cost, no profit or loss arises from pricing.
- d. This method is more suitable in times of falling prices.
- e. Deterioration and obsolescence can be avoided.

Disadvantages:

- a. When prices fluctuate, calculation becomes complicated. This increases the possibility of clerical errors.
- b. During the period of price fluctuations, material charged to jobs vary. Therefore, comparison between jobs is difficult.
- c. During the period of rising prices, product costs are under stated and profits are overstated. This may result in payment of higher dividend out of capital.

Check your progress 15

List out any three difference between store ledger and Bin card

Notes: (a) Write your answer in the space given below.

(b) Check your answer with the ones given at the end of this Lesson (pp. 233).

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15.6.2 Last In First Out Method (LIFO)

This method is opposite to FIFO. Here materials received last are issued first. Issues are made from the latest purchases.

Advantages:

- a. Issues are based on actual cost.
- b. Issue price reflects current market price.
- c. Product cost will be based on current market price and hence will be more realistic.
- d. There is no unrealized profit or loss.
- e. Simple to operate if purchases are not many and prices are steady or rising.
- f. When prices are raising this method is helpful in preparation of quotation or estimates.

Disadvantages:

- a. This method involves considerable clerical work.
- b. Under falling price, issues are priced at lower prices and stocks are valued at higher rates.
- c. Stock of material shown in the balance sheet will not reflect market price.
- d. Due to variation in prices, comparison of cost of similar job is difficult.
- e. This method is not accepted by the income tax authorities.

15.6.3 Simple Average Method

The simple average is determined by adding different prices of materials in stock and dividing the total by number of prices. Quantity purchased in each lot is ignored.

For Example: 20 units are purchased at Rs.10

30 units are purchased at Rs.11

40 units are purchased at Rs.12

$$\text{Simple average price} = \frac{10 + 11 + 12}{3} = \frac{33}{3} = \text{Rs.11.}$$

Advantages:

- a. This method is simple to understand and easy to operate.
- b. It reduces clerical work.
- c. It is suitable when price are stable.

Disadvantages:

- a. It does not take into account the quantities purchased.
- b. The value of closing stock becomes unrealistic.
- c. Material cost does not represent actual cost price.
- d. When prices fluctuate, this method will give incorrect result.

15.6.4 Weighted Average Method:

This is an improvement over the simple average method. This method takes into account both quantity and price for arriving at the average price. The weighted average is obtained by dividing the total cost of material in the stock by total quantity of material in the stock.

For Example :	20	units are purchased at Rs.10 p.u	Rs.	200
	<u>30</u>	units are purchased at Rs.20 p.u	Rs.	<u>600</u>
	<u>50</u>		Rs.	<u>800</u>

Weight average price = Rs. 800 / 50 = Rs. 16

Advantages:

- a. It gives more accurate results than simple average price because it considers both quantity as well as price.
- b. It evens out the effect of price fluctuations. All jobs are charged a average price. So, comparison between jobs is more easy and realistic.
- c. It is suitable in the case of materials subject to wide price fluctuations.
- d. It is acceptable to income tax authorities.

Disadvantages:

- a. Stock on hand does not represent current market price.
- b. When large number of purchases are made at different rates, the calculation is tedious. So, there are more chances of clerical error.
- c. With some approximation in average price, there will be profit or loss due to over or under charging of material cost to jobs.

15.7 MATERIAL LOSSES AND TYPES

The material requirements of production are issued on the basis of material requisitions. The output is obtained along with wastage, scrap, spoilages and defectives. The accurate cost of output can be computed after taking the losses into account.

Losses in the form of waste, scraps, spoilage and defectives are inherent and inevitable with any manufacturing activity. These losses can be controlled through adequate reporting and responsibility accounting. Standard for each type of loss is fixed. Actual are compared and action is to be taken by the management to control the abnormal losses, based on the variance.

Types of Material Losses

15.7.1 Waste:

Waste is inherent in any manufacturing activity. Waste is a part of raw material lost in the process of production having no recoverable value. Waste occurs invisibly in the form of evaporation or shrinkage. It can be visible and solid also. Examples of visible wastes are gases, dust, valueless residue, etc. Sometimes disposal of waste entails additional expenditure. Example: atomic waste. Loss in the form of waste increase with cost of production.

Control of Waste: A waste report is prepared periodically. The actual waste is compared with standard waste and remedial action is taken to control abnormal waste.

Accounting Treatment

Waste has no value. The accounting treatment differs according to waste being normal or abnormal.

i) Normal Waste: This is the inherent waste while manufacturing. It is in the form of evaporation, deterioration etc. The total cost of normal waste is distributed among the good units of output.

ii) Abnormal waste: The abnormal waste is transferred to costing profit and loss A/c to avoid fluctuation in production cost.

15.7.2 Scrap:

Scrap is the residue from certain manufacturing activities usually having disposable value. It can also be the discarded materials which can fetch some income. Examples of scrap are outlined material from stamping operations, filings, Saw dust, short lengths from wood working operations, sprues and 'flash' from foundry and moulding processes. Scrap may be sold or reused.

Control of Scrap

Scrap is controlled by fixation of standards for scrap, fixation of department wise responsibilities for scrap, etc. Keeping up proper records of scrap and periodical reporting helps in control of scrap. Actual scrap is compared with standard scrap. Suitable action is taken for excessive actual scrap over standard scrap.

Accounting Treatment

i) Sale value of scrap credited to profit and loss A/c: The sale value is credited to profit and loss account as other income. The cost of output is inclusive of scrap cost. This method of accounting treatment is adopted when the value is negligible.

ii) The Sale value credited to overhead or material cost: The sale value is reduced with selling cost of scrap and the net sale value is deducted from factory overhead or from material cost. This method is adopted when several jobs are done simultaneously and it is not possible to segregate the scraps job wise.

iii) Crediting the sale value to the Job or process in which Scrap arises: The sale value of scrap is credited to the job or process concerned from which the scrap has arisen. This method is followed when identification of scrap with specific jobs of processes is easy.

15.7.3 Spoilage:

Spoilage occurs when goods are damaged beyond rectification. Spoilage is disposed off without further processing. Spoilage cost is the cost upto the point of rejection less sale value.

The method of sale of spoilage depends on the extent of spoilage. Some of the spoilage is sold as seconds if the extent of damage is less; rest may be sold as scrap or treated as waste.

Control of Spoilage: Spoilage is controlled through proper reporting about the extent of spoilage. Standards are fixed as a percentage on production. Actual spoilage is compared with standard and variance is recorded. If the actual spoilage is more than the standard, suitable action is suggested to control it.

Accounting Treatment of Spoilage

Accounting treatment depends on whether the spoilage is normal or abnormal. Normal spoilage is borne by good units of output since it is inherent with production and it happens even under efficient conditions. Abnormal spoilage is

avoidable under efficient conditions. The cost of abnormal spoilage is charged to profit and loss account.

15.7.4 Defectives

It is a part of production which can be rectified and made into good units with additional cost. The defective work occurs due to raw materials of inferior quality, bad planning and poor workmanship. Defective units are rectified with additional cost of material, labour and overheads and sold as 'first quality' or 'seconds'.

i) Control of Defective: As in the case of other losses, defectives are controlled by accurate and periodical reports. Standards are fixed for defectives. Actual defective work is compared with standards. If actuals are more than the standards remedial action is taken to control it.

ii) Accounting Treatment of Defectives: The accounting treatment depends on the extent of defective production. If it is normal being inherent with production, it is identified with specific jobs. The cost of rectification is charged to specific jobs. If the cost is not treated with a job, the cost of rectification is treated as factory overhead.

If the defective work is out of abnormal circumstances the cost of rectification is transferred to profit and loss account.

15.7.5 Obsolete, Slow moving and Dormant Stocks: These items are part of inventory. They need suitable and timely action on the part of the management to avoid occurrence of loss in due course and to prevent locking up of working capital.

i) Obsolete Stocks: They are those stocks in the inventory which have been lying unused due to change in product process and design or method of manufacturing. They are generally out of date.

ii) Slow moving Materials: They are items in stock used at long intervals and thus lying idle for long periods.

iii) Dormant Stocks: They are items in stock not at all in use for a significant period of time.

The store keeper should highlight such items in his periodical reports so that the management may try (a) to dispose them off at any price or (b) clear them out to save space in the stores (c) exercise caution in future purchase of such items of materials.

15.8 ILLUSTRATIONS

Illustrations-1

Draw a stores ledger card recording the following transactions under FIFO method.

1998	July	1	Opening stock 2,000 units at Rs.10 each.
		5	Received 1,000 units at Rs.11 each
		6	Issued 500 units.
		10	Received 5,000 units at Rs.12 each.
		12	Received back 50 units out of the issue made on 6 th July.
		14	Issued 600 units.
		18	Returned to supplier 100 units out of goods received on 5 th .
		19	Received back 100 units out of the issue made on 14 th July.
		20	Issued 150 units.
		25	Received 500 units at Rs.14 each.
		28	Issued 300 units.

The stock verification report reveals that there was a shortage of 10 units on 18th July and another shortage of 15 units on 26th July.

Solution:

Stores Ledger Account

(FIFO Method)

Name: _____ Maximum level: _____ Folio No. _____
 Code No: _____ Minimum level: _____ Bin. No. _____
 Description: _____ Reorder level: _____ Location code: _____
 Reorder quantity: _____

Date	Particulars or Reference	Receipts			Issues			Balance		
		Qty. Units	Rate Rs.P.	Amount Rs.	Qty. Units	Rate Rs.P.	Amount Rs.	Qty. Units	Rate Rs.P.	Amount Rs.
1998										
Jul. 1	Balance b/d							2,000	10	20,000
5	G.R.N.No.	1,000	11	11,000				2,000	10	20,000
								1,000	11	11,000
6	M.R.No.				500	10	5,000	1,500	10	15,000
								1,000	11	11,000
10	G.R.N.No.	5,000	12	60,000				1,500	10	15,000
								1,000	11	11,000
								5,000	12	60,000
12	Mat. Retd. Note No.	50	10	500				1,500	10	15,000
								1,000	11	11,000
								5,000	12	60,000
								50	10	500
14	M.R.No.				600	10	6,000	900	10	9,000
								1,000	11	11,000
								5,000	12	60,000
								50	10	500
18	Debit Note. No.				100	11	1,100	890	10	8,900
	Shortage				10	10	100	900	11	9,900
								5,000	12	60,000

									50	10	500
19	Mat. Retd. Note No.	100	10	1,000					890	10	8,900
									900	11	9,900
									5,000	12	60,000
									50	10	500
									100	10	1,000
20	M.R.No.				150	10	1,500		740	10	7,400
									900	11	9,900
									5,000	12	60,000
									50	10	500
									100	10	1,000
25	G.R.N.No.	500	14	7,000					740	10	7,400
									900	11	9,900
									5,000	12	60,000
									50	10	500
									100	10	1,000
									500	14	7,000
26	Shortage				15	10	150		725	10	7,250
									900	11	9,900
									5,000	12	60,000
									50	10	500
									100	10	1,000
									500	14	7,000
28	M.R.No.				300	10	3,000		425	10	4,250
									900	11	9,900
									5,000	12	60,000
									50	10	500
									100	10	1,000
									500	14	7,000

Closing Stock = 6,975 units, valued at Rs.82,650

(425 x 10 + 900 x 11 + 5,000 x 12 + 50 x 10 + 100 x 10 + 500 x 14)

Note:

1. G.R.N.No. – Goods Received Note Number.
2. M.R.No. – Material Requisition Number. Mat. Retd. Note = Material Returned Note.

							150	2.40	
12				50	2.20	110			
				50	2.40	120	100	2.40	240
20	180	2.50	450				100	2.40	240
							180	2.50	450
28				100	2.40	240			
				100	2.50	250	80	2.50	200

STORES LEDGER ACCOUNT

Last In First Out (LIFO)

Date	Receipts			Issues			Balance		
	Qty.	Rate Rs.	Amt. Rs.	Qty.	Rate Rs.	Amt. Rs.	Qty.	Rate Rs.	Amt. Rs.
April 1998									
1							200	2.00	400
2				150	2.00	300	50	2.00	100
5	100	2.20	220				50	2.00	100
							100	2.20	220
7				100	2.00	220	50	2.00	100
10	150	2.40	360				50	2.00	100
							150	2.40	360
12				100	2.40	240	50	2.00	100
							50	2.40	120
20	180	2.50	450				50	2.00	100
							50	2.40	120
							180	2.50	450
28				180	2.50	450			
				20	2.40	48	50	2.00	100
							30	2.40	72

Stock at the end: 80 units valued at Rs.172

Illustration 3

From the following particulars, prepare stores ledger by adopting simple average method of pricing of material issues.

Date	Receipts	Issues
1990 Jan. 1	300 units at Rs.10 per unit	
10	200 unit at Rs.12 per unit	
12	400 units at Rs.11 per unit	
15		250 units
16		150 units
18	200 units at Rs.14 per unit	
20		300 units
22	300 units at Rs.15 per unit	
25	100 units at Rs.16 per unit	
27		200 units
31		100 units

Solution:**Stores Ledger Account****(Simple Average Method)**

Name: _____ Maximum level: _____ Folio No. _____

Code No: _____ Minimum level: _____ Bin. No. _____

Description: _____ Reorder level: _____ Location code: _____

Reorder quantity: _____

Date	Particulars or Reference	Receipts			Issues			Balance		
		Qty. Units	Rate Rs.P.	Amount Rs.	Qty. Units	Rate Rs.P.	Amount Rs.	Qty. Units	Rate Rs.P.	Amount Rs.
1990 Jan.	1 G.R.N. No.	300	10	3,000				300	10	3,000
	10 G.R.N. No.	200	12	2,400				500	-	5,400
	12 G.R.N. No.	400	11	4,400				900	-	9,800
	15 M.R.No.				250	11	2,750	650	-	7,050
	16 M.R.No.				150	11	1,650	500	-	5,400

18	G.R.N. No.	200	14	2,800				700	-	8,200	
20	M.R.No.				300	$\left(\frac{12+11+14}{3}\right)$	12.33	3,699	400	-	4,501
22	G.R.N. No.	300	15	4,500				700	-	9,001	
25	G.R.N. No.	100	16	1,600				800	-	10,601	
27	G.R.N.				200	$\left(\frac{11+14+15+16}{4}\right)$	14	2,800	600	-	7,801
31	G.R.N.				100	$\left(\frac{14+15+16}{3}\right)$	15	1,500	500	-	6,301

Closing stock = 500 units valued at Rs.6,301.

Note:

Though simple average of prices of the lots in stock is taken for issue purpose, for physical stock purpose, "FIFO" is inherent in simple average method. So, whenever the older stocks are exhausted physically, their prices are also omitted while calculating simple average of prices.

For example: With the issue on 16th Jan, the first lot purchased on Jan. 1 is physically exhausted. So, the price of Rs.10 is omitted when issue price is computed next time on Jan.20.

Illustration-4

Prepare as stores ledger account using weighted average method of pricing issue of materials.

1999

March	1	Balance 1,000 units @ Rs.70 per unit.
	3	Purchased 2,000 units @ Rs.80 per unit.
	5	Issued 500 units.
	10	Issued 1,000 units.
	15	Purchased 2,000 units at Rs.80 per unit.
	18	Issued 400 units.
	20	Received back 25 units out of the issue made on 5th March.
	22	Issued 1,500 units.
	24	Returned to supplier 30 units out of the purchases made on 15th March.
	25	Purchased 1,000 units at Rs.75 per unit.
	30	Issued 1,000 units.

Physical verification on 21st March revealed a shortage of 15 units and 20 units shortage on 30th March.

Solution:**Stores Ledger Account****(Weighted Average Method)**

Name: _____ Maximum level: _____ Folio No. _____
 Code No: _____ Minimum level: _____ Bin. No. _____
 Description: _____ Reorder level: _____ Location code: _____
 Reorder quantity: _____

Date	Particulars or Reference	Receipts			Issues			Balance		
		Qty. Units	Rate Rs.P.	Amount Rs.	Qty. Units	Rate Rs.P.	Amount Rs.	Qty. Units	Rate Rs.P.	Amount Rs.
1999 Mar.	1							1,000	70,000	70,000
	3	2,000	80	1,60,000				3,000	76.667	2,30,000
	5				500	76.667	38,333	2,500	76.667	1,91,667
	10				1,000	76.667	76,667	1,500	76.667	1,15,000
	15	2,000	80	1,60,000				3,500	78.571	2,75,000
	18				400	78.571	31,428	3,100	78.571	2,43,572
	20									
		Note No.	25	76.667	1,917			3,125	78.556	2,45,489
	21	Shortage			15	78.556	1,178	3,110	78.556	2,44,311
	22	M.R.No.			1,500	78.556	1,17,834	1,610	78,556	1,26,477
	24	Debit								
		Note No.			30	80	2,400	1,580	78.5297	1,24,077
	25	G.R.N.No.	1,000	75	75,000			2,580	77.16	1,99,077
	30	M.R.No.			1,000	77.16	77,160	1,560	77.16	1,20,3744
		Shortage			20	77.16	1,543			

15.9. LET US SUM UP

Stores ledger is a ledger where in we records the details of materials stored. In addition to that bin card is maintained in which details of materials in a particular bin is recorded. As and when the material requisition received from production department, the store keeper is need material. Some times Production Company may send bill of materials, in that materials required completing a particular job is specified. After a particular job is over excess materials may be returned to store, that

is recorded in materials return note. Wastage may be classified as normal, abnormal, scrap, and spoilage and suitable controlling measures must be taken in order to control wastage and properly recorded into accounts.

15.10 LESSON END ACTIVITIES

- 1 Write short notes on:
 - a) Bin card b) Store ledger c) Bill of material
- 2 What are the different types of material losses?
- 3 What is FIFO and LIFO method?
- 4 Distinguish between store ledger and bin card.
- 5 Prepare a stores ledger account form the following information adopting FIFO method of pricing of issues of materials.

1998	March	1	Opening Balance	500 tonnes at Rs.200
		3	Issue	70 tonnes
		4	Issue	100 tonnes
		8	Issue	80 tonnes
		13	Received from supplier	200 tonnes at Rs.190
		14	Returned from department 'A'	15 tonnes
		16	Issue	180 tonnes
		20	Received from supplier	240 tonnes at Rs.195
		24	Issue	300 tonnes
		25	Received from supplier	320 tonnes at Rs.200
		26	Issue	115 tonnes
		27	Returned from department 'B'	35 tonnes
		28	Received from supplier	100 tonnes at Rs.200

15.11 CHECK YOUR PROGRESS

Your answer may include any five of the following

- (i) Store ledger is a record of both quantity and value. Bin card is a record of quantity only.
- (ii) Store ledger is maintained by the cost clerk. Bin card is maintained by the storekeeper.
- (iii) Store ledger is kept in the cost office. Bin card is attached to the bin.
- (iv) Store ledger entries are made by the cost clerk. Bin card entries are made by the store keeper.
- (v) Store ledger entries are made on the basis of documents like goods received note, material requisition note etc. Bin card entries are made on the basis of actual quantity received and issued.

15.12 POINTS FOR DISCUSSION

1. Prepare the stores ledger from the following information using LIFO method of material valuation.

Date		Units	Unit cost Rs.
2-1-94	Purchase	210	2.50
10-1-94	Purchase	320	2.50
14-1-94	Issue of materials	260	-
17-1-94	Purchase	220	3.00
22-1-94	Issue of Materials	215	-
25-1-94	Purchase	225	3.10

2. The following transactions took place in respect of an item of Material.

	Receipt Quantity kg.	Rate Rs	Issue Quantity kg.
2-3-82	200	2.00	-
10-3-82	300	2.40	-
15-3-82	-	-	250
18-3-82	250	2.60	-
20-3-82	-	-	200

Record the above transactions in stores Ledger, pricing issues at Simple average rate.

3. The following transactions took place in respect of a material item.

Date	Receipt Quantity	Rate	Issue Quantity
2-3-1980	300	Rs.3.00	-
10-3-1980	400	Rs.3.40	-

15-3-1980	-	-	350
18-3-1980	350	Rs.3.60	-
20-3-1980	-	-	300

Prepare a price ledger sheet, pricing the issues at weighted average rate.

15.13 REFERENCES

1. Jain & Narang – Cost Accountancy.
2. Nigam & Shame – Cost Accountancy.
3. S.N. Maheswari – Management Accountancy.

LESSON 16 LABOUR COST

Contents:

16.0 Aims & objectives

16.1 Introduction

16.2 Types of Labours

16.3 Labour cost

16.4 Rate or Time and Motion study

16.4.1 Time study

16.4.2 Motion study

16.5 Job Analysis

16.6 Job Evaluation

16.7 Merit Rating

16.7.1 Importance of Merit rating:

16.8 Time-Keeping

16.8.1 Essentials of a good Time-keeping System

16.8.2 Time Booking

16.9 Labour Turnover

16.9.1 Meaning

16.9.2 Methods of Measurement of labour turnover

16.9.3 Causes of Labour turnover

16.10 Idle Time

16.10.1 Causes of Idle Time

16.10.2 Control of Idle Time

16.11 Over Time

16.12 Remuneration & Incentives

16.12.1 Essential of a good wage system

16.12.2 Methods of Remuneration

16.12.3 Premium Bonus schemes

16.13 Pay roll

16.14 Illustration

16.15 Let us Sum Up

- 16.16 Lesson-End Activities**
- 16.17 Check your Progress**
- 16.18 Points for Discussion**
- 16.19 References**

16.0 AIMS AND OBJECTIVES

- i) To know the different kinds of Labour
- ii) To understand the terms motions study and Time study.
- iii) To understand about job analysis and job evaluation.
- iv) To know the different methods of remuneration and incentives.
- v) To understand about labour Turnover.

16.1 INTRODUCTION

Labour cost is an important element of cost. It also forms significant part of prime cost and total cost. Labour costs are associated with human beings. This association makes it a significant item of cost not only because of huge wage bill of modern organization but also because labour cost has certain special features which other elements like material do not possess. The human element makes the control of labour cost difficult. Labour is the most perishable commodity. Once unused it cannot be recovered and the labour cost is bound to increase cost of production. At the same time labour is the only factor which has the unlimited productive capacity. In many instances labour can achieve wonders in regard to the amount and quality of work performed by them. However, labour is complex and therefore it requires systematic planning and control.

16.2 TYPES OF LABOURS

As in the case of materials, labour is also classified into (a) direct labour and (b) indirect labour.

- (a) Direct labour cost is cost of labour expended in altering the construction, composition or condition of the product. Direct labour cost is easily identified and allocated to cost units.
- (b) Indirect labour cost is the amount of wages paid to workmen who are not directly involved in altering the composition of the product. Direct labour cost forms part of prime cost, whereas indirect labour cost forms part of overheads.

16.3 LABOUR COST

Labour costs represent the various items of expenditure incurred on workers by the employer and would include the following:

(a) Monetary Benefits e.g.: (i) Basic Wages; (ii) Dearness Allowance; (iii) Employer's Contribution to Provident Fund; (iv) Employer's Contribution to

Employees' State Insurance (ESI) Scheme; (v) Production Bonus; (vi) Profit Bonus; (vii) Old age Pension; (viii) Retirement Gratuity.

(b) Fringe Benefits, e.g.: (i) subsidized Food; (ii) Subsidized Housing; (iii) Subsidized Education to the children of the workers; (iv) Medical facilities; (v) Holidays Pay; (vi) Recreational facilities.

16.4 RATE OR TIME AND MOTION STUDY

This department works in close harmony with the personnel, engineering and cost departments. This department performs the following functions:

- (1) Making of time and motion studies of labour and plant operations.
- (2) Making job analysis
- (3) Setting piece rates.

16.4.1 Time study

Time study may be defined primarily as the art of observing and recording the time required to do each detailed element of an industrial operation. The main object of time study is to determine the proper time required to complete the job. Before studying the time required for a job, the job is divided into a number of operations which are to be studied separately and the time needed for their completion is ascertained. Such study is conducted after the motion study because time is to be noted down for the necessary movements, which are decided by motion study. In computing the time required (or standard time) to do each operation, it is only fair to use average workers rather than exceptionally fast or slow workers. It is also fair to allow some time for fatigue and personal requirements of workers like smoking, going to urinals, drinking water and the like.

16.4.2. Motion study

There can be several methods of performing an operation; but the determination of the best way of performing an operation is made possible by motion study. It is a study of the movements of a worker or a machine in performing an operation for the purpose of eliminating useless, ill directed and inefficient motions in order to improve productivity. Motion study was developed by F.B. Gilbrith, an American management expert. The definition given by him in his book "Applied Motion Study" is reproduced as below:

"Motion study consists in dividing work into most fundamental elements possible; studying these elements separately and in relation to one another and from these studied elements when timed, building methods of least waste". Mr. Gilbrith has proved that motion study opens up great opportunities for time saving by eliminating wasteful motions and making necessary motions less tiring.

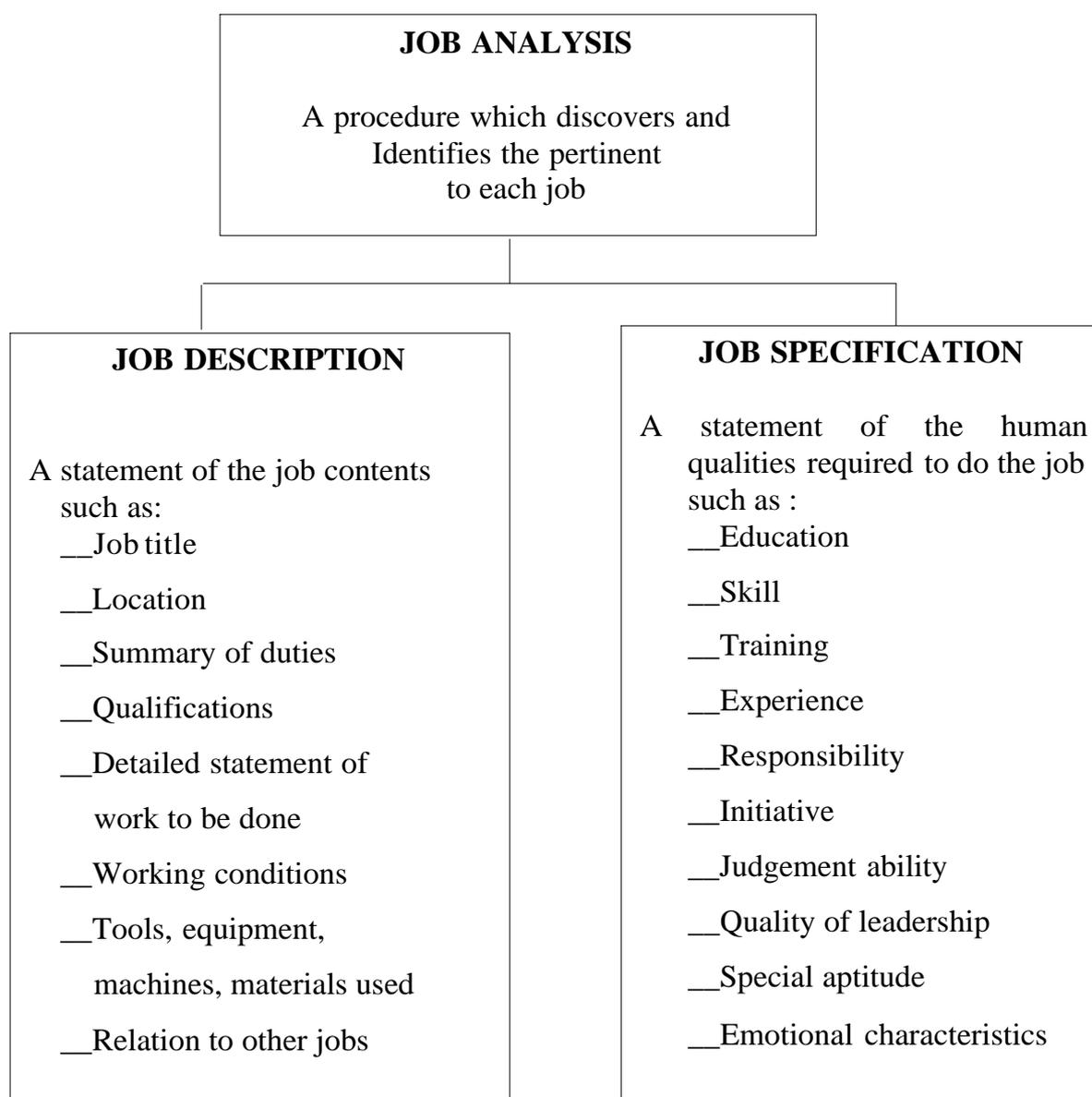
For conducting motion study, workers are studied at their jobs and all their movements and motions are noted. Each movement is known as therblig. Time spent on each therblig involved in an operation is collected by the use of a stop-watch. All motions are carefully studied to find out the motions which are very much needed to perform operation. The purpose of such study is to determine the best way of performing an operation involved in a job which every worker is supposed to follow.

Motion study is also known as Methods Study because it aims at finding out the best methods of completing the work.

16.5. JOB ANALYSIS

Job analysis is defined as the process of determining, by observation and study and reporting pertinent information relating to the nature of a specific job. It is the determination of the tasks which comprise the job and the skills, knowledge, abilities and responsibilities required of the worker for successful performance and which differentiates the job from all others.

Job analysis with its two immediate products can be represented briefly as follows:



16.6 JOB EVALUATION

Job evaluation is the process of studying and assessing the relative values of jobs within an industry, to ascertain their comparative worth. In addition to indicating relative wages value, job evaluation serves the following varied purposes:

- a) It helps to know whether workers are placed in jobs best suited to them and to the advantage of employers.
- b) It assists the personnel department in recruitment of workers by indicating the responsibilities, requirements and condition of work and qualities required for each job.
- c) Job evaluation forms the basis for training schemes.

16.7 MERIT RATING

Merit rating aims at evaluating the performance of workers. Main objective of merit rating is to reward employee on the basis of efficiency and merit. Merit rating brings out the comparative worth of workers. The traits generally considered for determining merit and worth of workers are as under:

- 1) Education Qualification and knowledge
- 2) Skill and experience
- 3) Attitude to the work
- 4) Quality of work done
- 5) Efficiency
- 6) Regularity
- 7) Integrity
- 8) Reliability
- 9) Qualities like leadership, initiative, self confidence and sense of judgment
- 10) Discipline
- 11) Cooperation

The above traits are allotted with points and total points scored on all traits determine the worth of workers. The employees may be rated individually as per the points they score and they may be put in groups based on their common scores of points.

16.7.1. Importance of Merit rating:

Merit is a valuable tool considered to be important for human resource measurement. Merit rating has the following advantages:

- (1) It helps to know the individual worker's worth and traits; this helps the supervisor to assign the tasks in which the worker is proficient.
- (2) It points out traits in which the workers are not proficient. The workers will have an opportunity to improve by suitable training.
- (3) It helps in increasing wages and promotion opportunities.
- (4) It helps to stimulate the self-confidence of workers as it recognizes the merit and worth of workers.

16.8 TIME-KEEPING

This department is concerned with maintenance of attendance time and job time of workers. Attendance time is recorded for wage calculation and job time or time booking is considered for computing time spent for each department, job, Operation and Process for calculating labour cost department wise, job wise and of each process and operation.

16.8.1 Essentials of a good Time-keeping System

1. Good time keeping system prevents 'proxy' for one another among workers

2. Time-keeping has to be done for even piece workers to maintain uniformity, regularity and continuous flow of production.
3. Both the arrival and exit of workers is to be recorded so that total time spent by workers is available for wage calculations.
4. Mechanised methods of time keeping are to be used to avoid disputes.
5. Late arrival time and early departure time are to be recorded to maintain discipline.
6. The time recording should be simple, quick and smooth.
7. Time recording is to be supervised by a responsible officer to eliminate irregularities.

16.8.2 Time Booking

Time spent by the worker on different jobs and works is called time booking. This is the productive time of workers. The following are the objectives of time booking:

1. It ensures that the time paid for, as per time keeping is properly utilized on jobs and orders.
2. It enables the cost department to ascertain the labour cost of each job or work order.
3. It helps in allocation and apportionment of wages among different departments where labour hour rate method is used as basis.
4. It helps to calculate idle time.
5. It is helpful when incentive schemes are in operation in the factory by revealing the time spent by the workers on different jobs.
6. Time booking also helps in measuring the efficiency of workers by comparing standard time for the jobs with actual time.

16.9 LABOUR TURNOVER

16.9.1 Meaning

Labour turnover may be defined as change in labour force i.e., percentage change in the labour force during a specific period. High labour turnover indicates that labour is not stabilised and there are frequent changes by way of workers leaving the organization. High labour turnover is to be avoided. At the same time very low labour turnover indicates inefficient workers are being retained in the organization.

16.9.2 Methods of Measurement of labour turnover

There are three methods of measuring labour turnover which are explained below:

i) Labour turnover under separation method:

The basis of calculating labour turnover under this method is the number of employees discharged during a period. It does not consider surplus labour being discharged by the firm (retrenchment).

$$\text{Labour Turnover} = \frac{\text{Number of employees left from the organization during a period}}{\text{Average number of employees during a period}}$$

ii) Labour turnover under Replacement Method:

The number of employees recruited during a period is taken as basis for calculating labour turnover. This does not consider expansion programmes.

$$\text{Labour Turnover} = \frac{\text{Number of employees replaced during a period}}{\text{Average number of employees during a period}}$$

iii) Labour Turnover Under Flux Method: This method takes into account the number of employees who left the organization and those recruited by the organization during a period.

$$\text{Labour Turnover} = \frac{\text{Number of employees left + Number of employees recruited during a period}}{\text{Average number of employees during a period}}$$

16.9.3 Causes of Labour turnover:

The causes for labour turnover can be broadly classified under three heads.

- (1) Personal Causes
- (2) Unavoidable Causes
- (3) Avoidable Causes

i) Personal Causes: Some of the employees may leave the organization on account of personal reasons as given below:

- (a) Circumstances of family.
- (b) Retirement on reaching the prescribed age.
- (c) Change in material status in case of women employees.
- (d) Dislike for the job or place;
- (e) Death of the employee.
- (f) Employee getting recruited in a better job.
- (g) Permanent disability due to accidents.
- (h) Involvement of employee in activities of moral turpitude.

ii) Unavoidable Causes: In certain instances the organization may discharge the employees due to unavoidable reasons as mentioned below:

- (a) Termination of workers on account of insubordination or inefficiency
- (b) Discharge of workers on account of irregularity or long absence.
- (c) Retrenchment of workers by the company on account of shortage of work.

iii) Avoidable Causes: Some of the employees may leave the organization account of the following reasons:

- (a) Non availability of promotion opportunities
- (b) Dissatisfaction with incentive schemes
- (c) Unhappy with remuneration
- (d) Unsuitable to job due to wrong placement
- (e) Unhappy with working conditions
- (f) Non availability of accommodation, health and recreational facilities
- (g) Lack of stability of Tenure.

16.10 IDLE TIME

When workers spent their whole time at different jobs, then the time booked for jobs must with the gate time. Ordinarily the time booked for jobs does not agree with the gate time. It so happens, because of reasons like, waiting for materials, machine breakdown, waiting for instruction, power failure etc. Reconciliation of gate time with time booked is facilitated by preparing an idle time card.

16.10.1 Causes of Idle Time

Idle time arises because of:

- i) Power failure
- ii) Waiting for work
- iii) Waiting for instruction
- iv) Waiting for tools
- v) Machine breakdown
- vi) Bad Planning of work
- vii) Accidents, strikes etc.
- viii) Time wasted in changing from one job to another
- ix) Season nature of industry
- x) Time taken to reach the department, from gate

16.10.2 Control of Idle Time

Following steps are suggested to control idle time:

- i) Vigilance must be exercised to control and eliminate idle time.
- ii) The instructions to the workers should be given in advance so that workers need not wait.
- iii) Plant and machine should be maintained properly so that their breakdown can be avoided
- iv) The causes of the idle time should be found out and the root cause must be removed.
- v) Regular and timely supply of raw materials must be made available through a good system of storing materials.

16.11 OVER TIME

When a worker works above his normal working hours, he is said to be working overtime. And according to Factories Act, 1948, overtime has to be paid at double the normal rate. If a worker works more than 9 hours on any day or 48 hours in a week, the worker is entitled for overtime payment.

A work is asked to do overtime, when he finishes his normal hours. The extra amount payable to a worker over and above the normal rate is an overtime premium. The factories Act says that a worker is to be paid twice his ordinary rate. If the Factory Act does not apply, Establishment Act will apply. This Act follows 1½ times his ordinary rates. However, overtime work may be avoided, because:

1. When a worker, after his normal hours of work is asked to do overtime, the quality of the output is affected.
2. Double rate has to be given (a loss to the firm).
3. Workers are tempted to earn more amounts without completing a job in normal working hours.

4. Overhead expenses will also increase.

At the same time, overtime may be allowed:

1. During seasonal rush.
2. When there is failure of power or breakdown of machines.
3. To finish a job in time.
4. When there is more demand for the products.

16.12 REMUNERATION AND INCENTIVES

Total wages earned by the employees is termed as remuneration. Time wages or piece wages earned plus other financial incentives constitute the earning of employees. Productivity depends mainly on labour and, other things like better equipment, production planning are contributory factors to higher productivity. Good wage system along with effective incentive system will encourage the labour force to give their best to the employer. More over attractive 'pay package' will reduce labour turnover. In addition to monetary incentives non monetary incentives also encourage employees to improve their productivity. Non monetary incentives include, promotional opportunities training schemes, etc. The remuneration system should serve the twin objectives of reducing the labour cost and at the same time the workers are to be compensated adequately for their work.

16.12.1 Essential of a good wage system:

The features of good wage system are listed below:

- i) The wage system has to be fair to employees and the employer.
- ii) The workers are to be assured of minimum guaranteed wages irrespective of work done.
- iii) Workers are to be compensated on the basis of their relative efficiency.
- iv) The wage system should be flexible to incorporate future changes.
- v) The wage system should encourage higher productivity and reduce labour turnover.
- vi) The wage system should be as per the labour policy of the government and follow the legislations applicable.
- vii) The wage system should equate with industry wage levels.
- viii) The method of computation of wages, wage rates and incentive system should be simple and easy for workers to understand.

16.12.2. Methods of Remuneration

The remuneration paid to employees should reduce labour turnover, increase productivity of employees and improve the quality of output. There are two basic methods of wage payment:

- i) Payment made on the basis of time spent by the workers in the factory irrespective of output produced.
- ii) Payment of wages on the basis of production or work done irrespective of time taken by the worker.

The methods of wage payment are respectively called time wages and piece wages.

(A) Time Rate System: Under this method the workers are paid on the basis of hourly, daily, weekly or monthly rate. There are five variations of time wages which are as follows:

- (1) Flat time rate
- (2) High day rate
- (3) Measured day rate
- (4) Graduated time rate
- (5) Differential time rate

(1) Flat time rate: Under this method workers are paid at a single rate on the basis of the time they are employed. The flat rate may be per hour, per day or per week or on monthly basis. The earnings of employees depend on total time they spend in the factory. The flat rate is decided on the basis of rates prevailing in the locality where the industry is situated.

This flat rate is suitable for highly skilled workers, unskilled workers and apprentices. It is suitable in the under mentioned types of work.

- (1) Where high quality goods are being produced
- (2) Where production is mechanized and involves high speed.
- (3) Situations where output cannot be measured.
- (4) Where effective and close supervision is possible.
- (5) Where incentive schemes cannot be introduced as the workers may not be directly involved with the final output.

To conclude the flat time rate does not recognize effort and it is not helpful in increasing output.

(2) High day rate: This method is introduced to attract skilled workers by offering the highest wages in the industry. This method also intends to remove the drawbacks of flat time rate which does not provide incentive for efficiency. High rate is paid to employees to achieve present targets of output. The target or standard output fixed is at high level which only a skilled worker can achieve. When high rate of wages are paid, overtime work is not permitted. High day rate reduces the labour cost and overhead cost per unit with the help of high output. This method will be successful only if efficient workers cooperate in achieving high standards of output.

(3) Measured day rate: Under this method of time wages the workers are given a particular work to be performed and the rate is fixed on the basis of the level of performance of specified work. This gives incentive to workers to get paid at high rate for high performance. The main drawback of measured day rate is that the workers are not paid any additional remuneration for any improvement in the level of performance originally specified.

(4) Graduated time rate: Under this method the wage rate is fixed by linking it with cost of living index. The rate of wages goes on changing with change in cost of living index. During the period of rising prices the workers find it helpful as they are compensated for increased prices.

(5) Differential time rate: This method recognizes individual efficiency and skill. The workers in the same group will be paid at different rates. High rates are paid for efficient workers and lower rates are paid for inefficient workers. There is positive incentive offered for improvement of performance.

(B) Piece Rate System: This is also called ‘payment by results’. The workers are paid on the basis of output produced by them. The earnings of the workers depend on the number of units of output produced and the wage rate per unit received by the worker. The payment by results system is successful only if the work is of repetitive nature. The effect of piece rate is that the remuneration is at constant rate and labour cost per unit remains stable throughout the range of output. The total cost per unit decreases considerably on account of reduction in the fixed overhead per unit for increased volume of production.

Variation of piece wages

There are four variations of piece wages. They are as under:

- (I) Straight piece rate
- (II) Differential piece rate:
 - (a) Taylor’s differential piece rate system
 - (b) Merrick’s multiple piece rate system
 - (c) Gantt’s task and bonus plan

(I) Straight piece rate system

Under straight piece rate system workers are paid according to the number of units produced at a fixed rate per unit.

Check your progress 16

Pointed out the essentials of good wages system.

- Notes: (a) Write your answer in the space given below.
- (b) Check your answer with the ones given at the end of this Lesson (pp. 256).

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II. Differential Piece Rates

This is an improvement over straight piece rate to increase the performance of both efficient and inefficient workers. Two or more rates are offered to workers. Higher performance is paid at a higher rate and lower performance is paid at lower piece rate. In other words the increase in wages is in proportion to increase in production.

There are three types of differential piece rates.

- (1) Taylor’s differential piece rate
- (2) Merrick’s differential piece rate system (Multiple piece rate system)
- (3) Gantt’s Task and Bonus plan

(1) Taylor's differential piece rate system

The 'Father of Scientific Management' F.W. Taylor has introduced this method. There are two different piece rates applicable to the workers.

- (a) Lower piece rate for the workers with below standard performance. The lower piece rate applicable is 80% of straight piece rate.
- (b) Higher piece rate for the work with performance above the standard or at the standard. The higher piece rate applicable is 120% of straight piece rate.

(2) Merrick's Multiple or Differential piece rate system

This method is an improvement over Taylor's method. This method has three rates for different level of performance. Wages are paid at ordinary piece rate to those workers whose performance is less than 83% of standard output; 110% of the ordinary piece rate is given to workers whose level of performance is between 83% and 100% of the standard and 120% of the ordinary piece rate is given to workers who produce more than 100% of the standard output.

(3) Gantt's Task and Bonus plan

Under this method a standard time is fixed for a task to be performed by workers. Actual time taken is compared with the standard time and efficiency is ascertained (1) Time wage are paid to the workers whose performance is below 100%, i.e., those who take more than the standard time. (2) Time wages and 20% of time wages as bonus are paid to those workers who take standard time to complete the job (whose performance is at 100%) (3) Wages at high piece rate on the whole output are paid to the workers who take less than standard time (whose efficiency is above 100%).

Some authors have provided for 20% bonus over and above high piece rate for above standard workers. But an overwhelming majority of authorities concur with the rates given above and are used here.

16.12.3. Premium Bonus schemes

Premium plans are introduced to enhance the individual performance of workers. The workers are induced to show efficiency by performance of job in less than the standard time.

Under the premium plans, a standard time is fixed for a specific job or operation and the worker is paid for the actual time taken by him at hourly rate plus wages for a portion of the time saved as bonus. "A premium and bonus plan" is called "incentive plan" because the worker is provided incentive to earn more wages by completing the work in less time.

Premium bonus systems

i) Monetary bonus:

The following are some of the popular monetary premium bonus systems

- (1) Halsey premium plan
- (2) Halsey- Weir premium plan
- (3) Rowan system
- (4) Barth variable sharing plan

- (5) Emerson's efficiency plan
- (6) Bedaux point premium system
- (7) Accelerating premium plan, etc.

(1) The Halsey premium plan: This system is known as fifty fifty plan. It was introduced by F.A. Halsey, an American engineer. Under this method a standard time is fixed for the performance of each job; worker is paid for actual time taken at an hourly rate plus 50% of time saved as bonus:

Total earnings = Hours worked x Rate per hour

$$+ \frac{50}{100} (Time\ saved \times Rate\ per\ hour)$$

$$= T \times R + 50\% (S - T) R$$

(2) Halsey- Weir Scheme: Under this method the worker gets a bonus at 30% of time saved unlike 50% under Halsey plan. Except for this change, Halsey and Halsey-weir plans are similar.

(3) Rowan System or Rowan Plan: The scheme was introduced in 1901 by David Rowan of Glasgow, England. The wages are calculated on the basis of hours worked where as the 'bonus is that proportion of the wages of time taken which the time saved bears to the standard time allowed'.

Total Earnings under Rowan plan =

Hours worked x Rate per hour + $\frac{Time\ saved}{Standard\ time} \times Hours\ worked \times Rate\ per\ hour$

$$= T \times R + \frac{S - R}{S} \times T \times R$$

(4) Barth's Variable Sharing Plan: Under this scheme wages are not guaranteed. The earnings in calculated by multiplying the rate per hour by the geometric mean of stander hour and actual hours worked. Thus

$$Earnings = Rate\ per\ hour \sqrt{Standard\ time \times Actual\ time}$$

(5) Emerson's Efficiency Plan: Under this plan, a standard time is fixed for every job or work. Worker's output is measured as a percentage of the standard fixed. When a worker's efficiency reaches $66\frac{2}{3}\%$ of the standard, he becomes eligible to get bonus at given rate. The rate of bonus increases gradually when efficiency percentage goes up form 67% to 100% of the basic time rate. For every additional 1% efficiency beyond 100%, additional bonus is 1% of the time rate.

Schedule of bonus

Efficiency %	Bonus
(A) Below $66\frac{2}{3}\%$	No bonus. Only time wages are paid.
(B) $66\frac{2}{3}\%$ to 100%	Bonus starting from 0.01% for 67% efficiency gradually Touches 20% at 100% efficiency.
(C) Above 100%	Bonus of 20% of time rate + 1% additional bonus for each additional 1% efficiency beyond the 100%.

Emerson's plan is beneficial to the workers as they are guaranteed with time wages and also are entitled to get bonus. Even average workers can earn bonus since it starts at $66\frac{2}{3}$ % of the standard. When workers attain and cross the standard by reaching and surpassing 100% efficiency level, bonus also accelerates.

(6) Bedeaux's point premium system: It is a combination of time and bonus schemes. Standard time for a job is determined by time study. Standard production per hour is fixed and the unit of measurement is 'minute'. An hour is taken as sixty minutes. Each minute at standard time is called a point-Bedeaux point or 'B'. The number of points has to be determined in respect of each job. If actual time is more than the standard time the worker is paid on hourly basis. Excess production is counted in points, for which a bonus of 75% is allowed to the worker and remaining 25% goes to the foreman, which itself is a novel feature.

$$\text{Earnings} = \text{Hours worked} \times \text{Rate per hour} + \frac{75}{100} \times \frac{BS \times RH}{60}$$

Where

B.S. = Number of points saved, i.e., number of points actually earned less the standard number of points for the job.

R.H. = Basic Rate per hour.

Accelerating Premium Plan: Under this premium plan bonus increases at a faster rate as output increases. The plan offers a higher incentive to the workers. The efficiency is determined on the basis of time saved or increased output. The plan is a complex one. It goads and forces the workers to increase production. Beyond a limit, workers may find the strain is intolerable.

Group Bonus Systems

Premium bonus schemes are meant for individual incentive where their output can be measured. In some cases individual output cannot be measured. Under such circumstances group bonus schemes take the place of individual bonus plans. The total bonus can be shared between workers of different skills in different specified proportions, the latter being commonly based on the individual time rates although agreed percentage allocations may be used. The main group bonus schemes are as under:

(1) Budgeted expenses bonus, (2) Cost efficiency bonus, (3) Priest may system (4) Towne's Gain sharing system and (5) Waste reduction scheme.

Indirect Monetary Incentives

The prosperity of business firms depends on employees. The employees are given a share in the profits based on the prosperity of the concern. Thus, co-partnership and profit sharing schemes fall under the category of indirect monetary incentives.

(a) Profit sharing: In this scheme there is an agreement between the management and employees, whereby the employer pays them a predetermined share of the profits of the undertaking in addition to wages.

(b) Co-partnership: In co-partnership or co-ownership employees are allotted shares of the company and they are to receive profits in proportion to their capital. In certain cases employees are given loan to buy the shares of the company and minimum period of service to be rendered is prescribed to get the shares allotted. This

reduces labour turnover. This scheme increases morale of the employees to a great extent if the company is profitable. Example: the stock option schemes in software companies.

ii) Non-monetary incentives: The employees are provided better facilities, instead of additional monetary payments. This is done to attract the efficient workers.

Non financial incentives include the following:

- (1) Favourable working conditions
- (2) Free health care
- (3) Providing rent free accommodation.
- (4) Free education facilities for children
- (5) Free transport facilities
- (6) Free holiday facility
- (7) Providing subsidized food
- (8) Welfare facilities
- (9) Opportunities for advancement
- (10) Protective clothing, liveries, uniforms, etc.

Advantages of non-monetary incentives

- (1) Attracting efficient and skilled labour force.
- (2) Increasing the morale of employees
- (3) Reduction labour turnover
- (4) Establishment of goodwill for the company
- (5) Reduction in absenteeism.

16.13 PAY ROLL

The pay roll is detailed information of the gross income and net income of each worker. The accuracy of the pay roll should be verified with the relevant records, in order to avoid errors of omission. After the preparation of wage sheet, is duly verified and sent to the each section, where cash is drawn and disbursed to the employees. From the gross income of each employees, certain deductions are made to arrive at the net wages payable. For instance, the payment of wages Act 1936 authorises deductions and some of them are:

- i) Fines and deductions for absence from duty
- ii) House rent and supply of amenities
- iii) Deductions for recovery of advance
- iv) For damages or loss of goods or money expressly entrusted to the employed person
- v) Provident Fund contribution, Employees state Insurance contribution
- vi) Dues to the co operative societies
- vii) Income Tax deduction etc.

16.14 ILLUSTRATIONS

Illustration - 1

From the following information calculate the labour turnover rate:

Number of workers at the beginning of the period: 3,800

Number of workers at the end of the period: 4,200

During the year, 40 workers left while 160 workers are discharged. 600 workers are recruited during the year; of these 150 workers are recruited to fill up vacancies and the rest are engaged on account of an expansion scheme.

Solution:

Average number of workers during the period =

$$\frac{\text{Number of workers at the beginning of the Period} + \text{Number of workers at end of the period}}{2}$$

$$\frac{3,800 + 4,200}{2} = 4,000$$

(a) Labour turnover by applying replacement method:

$$= \frac{\text{Number of workers replaced}}{\text{Average number of workers}} \times 100$$

$$= \frac{150}{4,000} \times 100 = 3.75 \%$$

(b) Labour turnover by applying separation method:

$$= \frac{\text{Number of workers separated}}{\text{Average number of workers}} \times 100$$

$$= \frac{40 + 160}{4000} = \frac{200}{4000} \times 100 = 5 \%$$

(c) Labour turnover by applying flux method

$$= \frac{\text{Number of workers replaced} + \text{No. of workers separated}}{\text{Average number of workers}} \times 100$$

$$= \frac{600 + 200}{4,000} \times 100 = 20 \%$$

Illustrations 2

Calculate the earnings of workers X and Y under (A) straight piece rate system and (B) Taylor's differential piece rate system from the following details:

Standard time per unit = 12 minutes

Standard rate per hour = Rs.60

Differentials to be used 80% and 120%

In a particular day of 8 hours, worker 'X' produced 30 units and worker 'Y' produced 50 units.

Solution:

(1) Level of performance of workers

Standard production for 12 minutes = 1 unit

Standard production per hour = $\frac{60 \text{ minutes}}{12 \text{ minutes}} = 5 \text{ units}$

Standard production per day of 8 hours = 8 hours x 5 units = 40 units

Worker 'X' who produced 30 units is below standard

Worker 'Y' who produced 50 units is above standard

(2) Calculation of piece rates

Standard rate per hour = Rs.60

Straight piece rate = $\frac{\text{Rs.60}}{5 \text{ units per hour}} = \text{Rs.12 per unit}$

Low piece rate for below standard production

= Standard piece rate x Lower differential

= Rs.12 x 80% = Rs.9.60 per unit

High piece rate for at or above standard production

= Straight piece rate x Higher differential

= Rs.12 x 120% = Rs.14.40 per unit.

(A) Earnings of workers under straight piece rate system

Earnings = Production of worker x Straight piece rate

Worker X: 30 units x Rs.12 per unit = Rs.360

Worker Y : 50 units x Rs.12 per unit = Rs.600

(B) Earnings of workers under Taylor's differential piece rate system:

Earnings = Production of worker x differential piece rate

Worker X = 30 units x Rs.9.60 per unit

= Rs.288

Worker Y = 50 units x Rs.14.40 per unit

= Rs.720

Illustration-3

The following are the particulars applicable to a work process:

Time rate Rs.5 per hour

High task 40 units per week

Piece rate above the high task Rs.6.5 per unit

In a 40 hour week, the production of the workers was as follows:

A 35 units B 40 units

C 41 units D 52 units

Calculate the wages of the workers under Gantt's task bonus plan.

Solution:

(1) Under Gantt's task bonus plan, wages are ascertained as follows:

(a) When output is below standard, guaranteed time wages are paid

(b) When the output is at standard, time rate + 20% Bonus

(c) When the output is above standard high piece rate on worker's whole output.

(2) Level of performance of workers

$$\text{Level of performance} = \frac{\text{Actual output}}{\text{High task output}} \times 100$$

$$A - \frac{35}{40} \times 100 = 87.5\%$$

$$B - \frac{40}{40} \times 100 = 100\%$$

$$C - \frac{41}{40} \times 100 = 102.5\%$$

$$D - \frac{52}{40} \times 100 = 130\%$$

(3) Earnings of workers

A - Below standard performance – Only time wages

$$40 \text{ hours} \times \text{Rs.}5 \text{ per hour} = \text{Rs.}200$$

B - Performance at standard – Time wages + 20% bonus

$$40 \times 5 + 20\% (40 \times 5) = 200 + 40 = \text{Rs.}240$$

C - Performance above standard – High piece rate on whole output

$$41 \times 6.5 = \text{Rs.}266.5$$

D - Performance above standard – High piece rate on whole output

$$52 \times 6.5 = \text{Rs.}338$$

Note: Some experts provide for 20% bonus in addition to high piece rate for above standard performance. However, an overwhelming majority of authorities on cost accounting state that above standard workers receive 'High piece rate on whole output'. So, the same method is adopted in the above working and also the answer for exercises.

Illustration 4

A worker is paid at 25 paise per hour for completing a work within 8 hours. If he completes the work within 6 hours, calculate his wages under Halsey plan when the rate of premium is 50%. Also ascertain the effective hourly rate of earning by the worker.

Solution:

Wages or earnings under Halsey scheme

$$= T \times R + \frac{50}{100} (S - T)R$$

T = Actual time or time taken = 6 hours

R = Rate per hour = Rs.0.25

S = Standard time = 8 hours

$$\text{Earnings (or) wages} = 6 \times 0.25 + \frac{50}{100} (8 - 6) 0.25$$

$$= \frac{\text{Total earning}}{\text{Actual time}}$$

$$= \frac{1.75}{6} = \text{Re.}0.292 \text{ per hour (approx.)}$$

Illustration 5

Standard time 10 hours. Number of units to be completed 5. Hourly rate is Re.0.25. Time taken 8 hours. Calculate a worker's total earnings under Rowan plan. Also determine the effective rate of earnings per hour.

Solution:

Earnings under Rowan Plan

$$= T \times R + \frac{S-R}{S} \times T \times R$$

T = Time taken or actual time = 8 hours

R = Rate of wages = Re.0.25 per hour

S = Standard time or time allowed = 10 hours

Total earnings of worker under Rowan plan

$$= 8 \times 0.25 + \frac{10-8}{10} \times 8 \times 0.25$$

$$= 2 + 0.40 = \text{Rs.}2.40$$

Effective rate of earnings per hour

$$= \frac{\text{Total Earnings}}{\text{Actual time taken}}$$

$$= \frac{2.40}{8} = \text{Re.}0.30 \text{ per hour}$$

Illustration 6

Ascertain wages of a worker under Bedeaux's point premium system from the following details:

Standard output per day of 8 hours = 160 units

Actual output during a day of 8 hours 200 units

Rate per hour is Rs.5.00

Solution:

Standard production points = $8 \times 60 = 480$ 'B's

One unit of standard output = $\frac{480}{160} = 3$ 'B's

Actual output = $200 \times 3 = 600$ 'B's

Points saved = $600 - 480 = 120$ 'B's

Earnings = Time taken x Hourly rate + 75% of time saved x Hourly rate

$$= 8 \times 5 + \frac{75}{100} \times \frac{120 \times 5}{60}$$

$$= 40 + 7.5 = \text{Rs.}47.5$$

Note (1) Each 'B' represents one minutes standard work.

Note (2) 120 is divided with sixty in earnings

Calculation because time saved is in 'B's or minutes but rate given is hourly rate.

Illustration 7

From the following details, calculate the earnings of a worker under Barth's variable sharing plan:

Standard time 25 hours

Actual time 20 hours
Standard rate per hour: Rs.12

Solution:

$$\begin{aligned} &\text{Earnings under Barth's variable sharing plan} \\ &= \text{Rate per hour} \times \sqrt{\text{Standard Time} \times \text{Actual Time}} \\ &= 12 \times \sqrt{25 \times 20} = 12 \times 22.36 = \text{Rs.}268.33 \end{aligned}$$

Illustration 8

X Ltd., employs Emerson's efficiency plan in its factory. Standard output per day of 8 hours is fixed at 50 units. Normal time wage is Rs.5 per hour.

Four workers M, N, O and P produced goods as follows on a specific day.

'M' 30 units. 'N' 45 units. 'O' 50 units. 'P' 58 units

Ascertain the earnings of workers under Emerson's efficiency plan. You may assume. 6% as bonus for every additional 1% efficiency between $66\frac{2}{3}\%$ and 100%.

Solution:

(1) Schedule of Bonus under Emerson's plan

1. Below $66\frac{2}{3}\%$ efficiency – Only time wages. No bonus
2. $66\frac{2}{3}\%$ to 100% - Bonus which begins at $66\frac{2}{3}\%$ and reaches 20% at 100% efficiency.
3. Above 100% efficiency 20% of time wages + 1% bonus for every additional 1% efficiency.

(2) Efficiency level of workers = $\frac{\text{Actual output}}{\text{Standard output}} \times 100$

$$\text{Efficiency level of 'M'} = \frac{30}{50} \times 100 = 60\%$$

$$\text{Efficiency level of 'N'} = \frac{45}{50} \times 100 = 90\%$$

$$\text{Efficiency level of 'O'} = \frac{50}{50} \times 100 = 100\%$$

$$\text{Efficiency level of 'P'} = \frac{58}{50} \times 100 = 116\%$$

(3) Earnings of workers = Time wages + Bonus

$$\text{M} - 8 \text{ hours at Rs.5 per hour} = 8 \times 5 = \text{Rs.}40$$

$$\text{N} - 8 \times 5 + 8 \times 5 \times \frac{96 - 66.67}{100} \times 6 = 40 + 5.60 = 45.60$$

$$\text{O} - 8 \times 5 + 8 \times 5 \times \frac{20}{100} = 40 + 8 = 48$$

$$\text{P} - 8 \times 5 + 8 \times 5 \times \frac{36}{100} = 40 + 14.4 = \text{Rs.}54.4$$

Note: As per instruction given in the problem, bonus for 'N' is at.6% for every 1% between 66.67 and 90= $23.33 \times 6 = 14\%$ approximately.

16.15 LET US SUM UP

Labour is the only factor which has unlimited production. Capacity. Due consideration is given to labourers, so experts innovate new methods to evaluate the performance of labourers. Labour turnover means the percentage change in the labour force during a specific period. High labour turnover should be avoided. If the labour turnover is high company will find the cause of labour turnover. Idle time is the difference between time paid and time worked. If the idle time is more immediately the company should analyse the causes of idle time and it should take effort to control the idle time.

16.16 LESSON END ACTIVITIES

1. What is labour Turnover? How can it be reduced?
2. What is Merit rating? What are its merits & demerits?
3. What is idle time? How is it treated in cost accounts?
4. Explain the different variations of Time Rate system.
5. Describe various Piece Rate systems and their pros and cons.
6. From the following particulars supplied by the personnel department of a firm Calculate labour turnover:

Total number of employees at the beginning of the month	2,010
Number of employees who are recruited during the month	30
Number of employees who left during the month	50
Total number of employees at the end of the month	1,990

7. Rajan Ltd. follows Taylor's differential piece rate system- 80 and 120 being the differentials for below standard and above standard work.
From the following ascertain the earnings of workers X and Y.
Standard time 15 minutes per unit
Time worked 8 hours
Unit produced X: 28 Y: 35
Normal piece rate per unit Rs.2
8. Calculate earnings of 3 workers A, B and C under the Merrick's plan of piece rate system given the following:
Standard production 120 units
Production of A 90 units
Production of B 100 units
Production of C 130 units
Ordinary piece rate Re.0.10.
9. From the information given below, calculate the earnings of the three workers, X, Y and Z under gantt's task bonus plan:
 - a) time rare Rs.15 per hour
 - b) High task per day of 8 hours – 80 hours
 - c) High piece rate Rs.2 per unit
 - d) Day's output: X 70 units Y 80 units Z 90 units
10. Calculate the earnings of a worker from the following as per Halsey plan:

- a) Standard time – 12 hours; Actual time ‘A’ 10 hours ‘B’ 8 hours ‘C’ 6 hours.
Hourly rate Rs.8.
- b) Hourly rate of wages Rs.10
Standard time for production of a dozen units of product = 2 hours.
Actual time taken by the worker to produce 25 dozens 40 hours.
- c) Articles manufactured by Mr. ‘S’ a worker in a factory 300
Standard time allowed 10 minutes per unit.
Actual time 44 hours
Standard rate Rs.5 per hour.

16.17 CHECK YOUR PROGRESS

Your answer may include the following

- The wage system has to be fair to employees and the employer.
- The workers are to be assured of minimum guaranteed wages irrespective of work done.
- Workers are to be compensated on the basis of their relative efficiency.
- The wage system should be flexible to incorporate future changes.
- The wage system should encourage higher productivity and reduce labour turnover.

16.18 POINTS FOR DISCUSSION

1. A worker earns Rs.2 as bonus on a job which requires 20 standard hours at Re.0.50 per hour, under Halsey incentive system based on 50:50. What would be his earnings under Rowan Plan?
2. From the following information, calculate the bonus and earnings under Emerson’s Efficiency Bonus plan:

Standard output in 12 hours	192 units
Actual output in 12 hours	168 units
Time rate	Re.0.75 per hour.

If the actual output is 240 units, what will be the amount of bonus and earnings?

16.19 REFERENCES

1. Jain & Narang – Cost Accounting.
2. Nigam and Sharma – Cost Accounting.

LESSON 17 STANDARD COSTING

Contents:

- 17.0 Aims and Objectives**
- 17.1 Introduction**
- 17.2 Definition: Standard, Standard cost, standard costing**
- 17.3 Advantages of standard costing**
 - 17.3.1 Cost control
 - 17.3.2 Elimination of wastage and inefficiency
 - 17.3.3 Norms
 - 17.3.4 Locates sources of inefficiency
 - 17.3.5 Fixing responsibility
 - 17.3.6 Management by exception
 - 17.3.7 Improvement in methods and operations
 - 17.3.8 Guidance for production and pricing policies
 - 17.3.9 Planning and Budgeting
 - 17.3.10 Inventory valuation
- 17.4 Limitation of standard costing**
- 17.5 Applicability of standard costing**
- 17.6 Setting the Standard**
- 17.7 Introduction of Standard Costing System**
 - 17.7.1 Establishment of cost centres
 - 17.7.2 Classification and codification of accounts
 - 17.7.3 Determining the types of standards and their basis
 - 17.7.4 Determining the expected level of activity
 - 17.7.5 Setting standards
- 17.8 Estimated Costing versus Standard Costing**
- 17.9 Historical Cost and Standard Cost**
- 17.10 Budgetary Control and Standard Costing**
- 17.11 Standard Costing and Marginal Costing**
- 17.12 Standard Costing and Standardized Costing**
- 17.13 Standard Cost card**
- 17.14 Let us Sum Up**
- 17.15 Lesson-End Activities**
- 17.16 Check your Progress**
- 17.17 Points for Discussion**
- 17.18 References**

17.0 AIMS AND OBJECTIVES

- (i) To know the meaning of standard, standard cost and standard costing.
- (ii) To understand the difference between estimated costing and standard costing and also between budgetary control and standard costing.
- (iii) To study the advantages and limitation of standard costing.
- (iv) To learn the determination of standard costs.

17.1 INTRODUCTION

Cost control is a basic objective of cost accountancy. Standard costing is the most powerful system ever invented for cost control.

Historical costing or actual costing is nothing but, a record of what happened in the past. It does not provide any 'Norms' or 'Yardsticks' for cost control. The actual costs lose their relevance after that particular accounting period. But, it is necessary to plan the costs, to determine what should be the cost of a product or service. If the actual costs do not conform to what the costs should be, the reasons for the change should be assessed and appropriate action should be initiated to eliminate the causes.

Standard costing fulfills the need to compensate the shortcomings of Historical costing from the point of view of cost control. (a) It provides the norms or yardsticks in the form of standards- specifying what costs should be or yardsticks in the form of standards- specifying what cost should be (b) comparison of actual costs with standards is facilitated to ascertain variances for each element of cost. (c) The variances are further analysed for contributory reasons. Responsibility is fixed on the basis of the reasons for each variance. (d) Corrective measures are undertaken to eliminate the unfavourable variances wherever possible.

Thus, standard costing is a costing technique specifically evolved to provide complete 'Infrastructure' and 'Systematic approach' for cost control.

17.2. DEFINITION: STANDARD, STANDARD COST, STANDARD COSTING

Standard. According to Prof. Eric L.Kohler, "Standard is a desired attainable objective, a performance, a goal, a model". Standard may be used to a predetermined rate or a predetermined amount or a predetermined cost.

Standard Cost: Standard cost is predetermined cost or forecast estimate of cost. I.C.M.A. Terminology defines Standard Cost as, "a predetermined cost, which is calculated from management standards of efficient operations and the relevant necessary expenditure. It may be used as a basis for price-fixing and for cost control through variance analysis". The other names for standard costs are predetermined costs, budgeted costs, projected costs, model costs, measured costs, specifications costs etc. Standard cost is a predetermined estimate of cost to manufacture a single unit or a number of units of a product during a future period. Actual costs are compared with these standard costs.

Standard Costing is defined by I.C.M.A. Terminology as, "The preparation and use of standard costs, their comparison with actual costs and the analysis of variances to their causes and points of incidence".

"Standard costing is a method of ascertaining the costs whereby statistics are prepared to show (a) the standard cost (b) the actual cost (c) the difference between these costs, which is termed the variance" says Wheldon. Thus the technique of standard cost study comprises of:

1. Pre-determination of standard costs;
2. Use of standard costs;

3. Comparison of actual cost with the standard costs;
4. Find out and analyse reasons for variances;
5. Reporting to management for proper action to maximize efficiency.

17.3. ADVANTAGES OF STANDARD COSTING

17.3.1 Cost control:

Standard costing is universally recognised as a powerful cost control system. Controlling and reducing costs becomes a systematic practice under standard costing.

17.3.2 Elimination of wastage and inefficiency:

Wastage and inefficiency in all aspects of the manufacturing process are curtailed, reduced and eliminated over a period of time if standard costing is in continuous operation.

17.3.3 Norms:

Standard costing provides the norms and yard sticks with which the actual performance can be measured and assessed.

17.3.4 Locates sources of inefficiency:

It pin points the areas where operational inefficiency exists. It also measures the extent of the inefficiency.

17.3.5 Fixing responsibility:

Variance analysis can determine the persons responsible for each variance. Shifting or evading responsibility is not easy under this system.

17.3.6 Management by exception:

The principle of 'management by exception can be easily followed because problem areas are highlighted by negative variances.

17.3.7 Improvement in methods and operations:

Standards are set on the basis of systematic study of the methods and operations. As a consequence, cost reduction is possible through improved methods and operations.

17.3.8 Guidance for production and pricing policies:

Standards are valuable guides to the management in the formulation of pricing policies and production decisions.

17.3.9 Planning and Budgeting:

Budgetary control is far more effective in conjunction with standard costing. Being predetermined costs on scientific basis, standard costs are also useful in planning the operations.

17.3.10 Inventory valuation:

Valuation of stocks becomes a simple process by valuing them at standard cost.

17.4. LIMITATION OF STANDARD COSTING

1. It is costly, as the setting of standards needs high technical skill.
2. Keeping of up-to-date standard is a problem. Periodic revision of standard is a costly thing.
3. Inefficient staff is incapable of operating this system.
4. Since it is difficult to set correct standards, it is difficult to ascertain correct variance.

5. Industries, which are subject to frequent changes in technological process or the quality of material or the character of labour, need a constant revision of standard. But revision of standard is more expensive.
6. For small concerns, standard costing is expensive.

17.5 APPLICABILITY OF STANDARD COSTING

Standard Costing is a control device. It is not a separate method of product costing. Any activity of recurring nature is susceptible for setting standards. The standard-cost process is mostly used to control the operating tasks. Manufacturing activities are routine and frequent and therefore easy for establishing standards.

Industries where standardized and uniform work of repetitive nature is done are suitable for introduction of standard costing. Standard costing system is of little use or no use where works vary from job to job or contract to contract.

17.6 SETTING THE STANDARDS

While setting standard cost for operations, process or product, the following preliminaries must be gone through:

- i) There must be Standard Committee, similar to Budget Committee, in which Purchase Manager, Personnel Manager, and Production Manager are represented. The Cost Accountant coordinates the functions of the Standard Committee.
- ii) Study the existing costing system, cost records and forms in use. If necessary, review the existing system.
- iii) A technical survey of the existing methods of production should be undertaken so that accurate and reliable standards can be established.
- iv) Determine the type of standard to be used.
- v) Fix standard for each element of cost.
- vi) Determine standard costs for each product.
- vii) Fix the responsibility for setting standards.
- viii) Classify the accounts properly so that variances may be accounted for in the manner desired.
- ix) Comparison of actual costs with pre-determined standards to ascertain the deviations.
- x) Action to be taken by management to ensure that adverse variances are not repeated.

17.7 INTRODUCTION OF STANDARD COSTING SYSTEM

Introducing standard costing in any establishment requires the fulfillment of following preliminaries.

1. Establishment of cost centres;
2. Classification and codification of accounts;
3. Determining the types of standards and their basis;
4. Determining the expected level of activity;
5. Setting standards

17.7.1 Establishment of cost centres

A cost centre is a location, person or item of equipment for which costs may be ascertained and used for the purpose of cost control. The cost centres divide an entire organisation into convenient parts for costing purpose. The nature of production and operations, the organisational structure, etc. influence the process of establishing cost centres. No hard and fast rule can be laid down in this regard. Establishment of the cost centres is essential for pin pointing responsibility for variances.

17.7.2 Classification and codification of accounts

The need for quick collection and analysis of cost information necessitates classification and codification. Accounts are to be classified according to different items of expenses under suitable headings. Each of the headings is to be given a separate code number. The codes and symbols used in the process facilitate introduction of computerization.

17.7.3 Determining the types of standards and their basis

Standards can be classified into two broad categories on the basis of the length of use.

- (a) **Current standards:** These are standards which are related to current conditions, particularly of the budget period. They are for short-term use and are more suitable for control purpose. They are also more amenable for combining with budgeting.
- (b) **Basic standards:** These are long-term standards, some of them intended to be in use for even decades. They are helpful for planning long-term operations and growth. Basic standards are established for some base year and are not changed for a long period of time.

It is preferable to use both kinds of standards depending on the nature and type of activity or cost for which they are fixed. Generally, the number of basic standards may be very few and current standards are predominant in number.

Basic for standards

There can be significant difference in the standards set depending on the base used for them. The following are the different bases for setting standard, whether they are current standards for short-term or basic standards for long-term use.

- (a) **Ideal standards:** These standards reflect the best performance in every aspect. They are like 100 marks in a paper for students taking up examinations. What is possible under ideal circumstances in all aspects is reflected in these standards.
They are impractical and unattainable in practice. Their utility for control purpose is negligible.
- (b) **Past performance based standards:** The actual performance attained in the past may be taken as basis and the same may be retained as standard. Such standards do not provide any incentive or challenge to the employees. They are too easy to attain. Their value from cost control point of view is minimal.
- (c) **Normal standard:** It is defined as “the average standard which, it is anticipated can be attained over a future period of time, preferably long enough to cover one trade cycle”. They are average standard reflecting the average performance over a complete trade cycle which may take three to five years. For a specific period, say a budget period, their relevance is negligible.

- (d) **Attainable high performance standards:** They are based on what can be achieved with reasonable hard work and efforts. They are based on the current conditions and capability of the workers. These standards are considered to be of great practical value because they provide sufficient incentive and challenge to the workers to attain them. Any variances from such standard are really significant because the standard which is attainable with effort is not attained.

17.7.4 Determining the expected level of activity

Capacity of operation or level of activity expected over a future period is vital in fixing current or short-term standards. When the activity level is decided on the basis of sales or production, whichever is the limiting factor, all standard can be developed with the activity level as the focal point. The purchase of material, usage of material, labour hours to be worked, etc. are solely governed by the planned level of activity.

17.7.5 Setting standards

Setting standards may also be called developing standards or establishment of standard cost because as a consequence of setting standards for various aspects, standard cost can be computed.

Setting standards is like laying a building foundation. The success of standard costing system depends on the care with which the standards are developed.

It is preferable, particularly in large firms, to establish 'Standard committee' which is responsible for determining standards in all aspects of the business and also making suitable revisions in due course. The standards committee usually consists of all the functional managers like purchase, production and sales, technical experts like Production Engineer, the General Manager and the Cost Accountant. It is the Cost Accountant's role which is crucial because he has to assign the monetary values for the different standards set by the other experts in each area or function.

The following is a brief discussion on the setting of standards for each element of cost:

(1) Standards for Direct Material Cost

Direct material standards are broadly divided into standards for usage or quantity standards and standards for material price. There may be several materials used in the production of a product. It is necessary to set standards for each of the important materials.

Material usage or Quantity standards

These standards deal with the quantity of material needed for each unit of finished product, the quality specifications and tolerances like length, breadth, strength, volume, etc. Based on the past experience, the normal loss to be expected has to be determined. Based on the expected or permitted loss, the quantity standard per unit is fixed. If two or more materials are mixed in the production, the standard proportion of each material has to be fixed.

The production manager and technical expert play the most important role in setting quantity standards. Their knowledge, experience and the shop floor situation are instrumental in deciding upon the quality and quantity of each material. The following are the usual quantity standards set.

- (a) Quantity of material per unit of finished product.
- (b) Standard loss permitted in the production process.

- (c) The proportion of different materials, if more than one material is used.
- (d) The yield expected from material.

Material price standards: Price standards for the material are the most difficult to set because material prices are subject to the market forces. Usually, current market price for each material, the trends observed and the forecasts of the purchasing department are the determining factors.

While fixing price standards, the other terms like trade discounts, freight, credit terms, etc., are also considered.

Material price should also include the cost of purchasing and storing including the handling costs.

It is customary to prepare a standard 'Bill of Materials' which is a list of all the direct materials to be used and incorporate therein all the standards set for each material so that it acts like a ready reckoner.

(2) Standards for direct labour cost

The two major aspects for which standards are developed relating to labour are (A) Labour time and (B) Labour rate.

(A) Labour Time Standards: These standards represent the time to be taken by the direct labour in the production of one unit of product or performing a specific operation. It may be determined with the help of (1) Time and Motion study; (2) Technical estimates; (3) Trial runs; (4) Past experience; (5) Caliber of the workers; (6) Working conditions.

Since, human factor is involved, the cooperation of workers should be obtained by suitable briefing about the purpose and significance of the exercise.

If different kinds of labour have to perform group tasks, standards should also be fixed for labour mix or gang.

The most ticklish problem in setting the labour time standards is the provision for idle time. Idle time includes rest pauses, personal needs of the workers, etc. the care with which the idle time standards are fixed determines the level of arguments and quarrels on the production lines.

The following are the usual labour time standards etc.

- (a) Standard time to be taken for one unit of output.
- (b) Idle time permitted
- (c) Proportion of different kinds of labour where two or more kinds of workers are involved.

(B) Labour rate standards: Labour rates are generally governed by agreements with trade unions, the firm's wage policy and incentive systems in use. However, the following factors influence the labour rate standards: (i) Existing, labour rates; (ii) Rates paid by similar firms; (iii) Type or kind of labour needed for production and (iv) Labour laws governing the industry.

Wage rate standards differ for different grades or kinds of labour. The rate is also subject to revision whenever new agreements are concluded with the unions.

(3) Standards for overhead cost

Overheads are usually segregated into fixed and variable. It is necessary to fix standard overhead rates separately for fixed overheads and variable overheads. Separate rates have to be determined for factory, office, selling and distribution overheads- both fixed and variable.

While determining the overhead rates, the factors to be considered are:
(a) Standard level of activity; (b) Number of units to be produced (c) Labour and machine hours to be worked.

Standard overhead costs – both fixed and variable should be determined. Based upon the standard output and standard hours, the overhead rates are finalized.

Standard output and its standard cost

Once all the cost standards are finalised, it is possible to consolidate them in the shape of ‘standard cost for standard output’.

The direct material cost per unit, direct wages per unit, fixed and variable overheads per unit can be listed out. The total of all of these represents standard cost per unit. This can be multiplied with the standard output for the budget period or a specified period to ascertain the standard cost of the standard output.

Standard hour

If a single product is produced in a firm, the output can be expressed in terms of the units of that product. However, several different products may be produced and they may be measured in different units like kgs, Tons, liters, gallons, barrels, etc. Though all of these can not be expressed in terms of a single measure, it possible to express all of theme in terms of ‘Time’. Time taken to produce is the common factor for all output. Production, expressed in terms of hours needed to produce them is called ‘Standard hours’.

According to I.C.M.A., England, “Standard hours are a hypothetical hour which represents the amount of work which should be performed in one hour under standard conditions”.

The ‘Standard hour’ is very useful is ascertaining overhead variances. The total output of a firm comprising different products is expressed in the form of standard hours and the fixed and variable overhead rates are set for standard hours.

Revision of standards

Current or short-term standards have to be periodically revised. Long-term or basic standards may be used for longer periods. They may also need revision when the factors affecting the standard change.

Revision may be needed in all the following cases:

- (a) Change in market price of materials
- (b) permanent change in labour rates
- (c) Major alterations in products or method of production or materials used
- (d) Basic change in product specifications or design.
- (e) Errors in setting of the original standards.

Check your progress 17

List out the any two advantages and two limitations of standard costing

Notes: (a) Write your answer in the space given below.

- (b) Check your answer with the ones given at the end of this Lesson (pp. 268).

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17.8 ESTIMATED COSTING AND STANDARD COSTING

Both standards costing and estimated costing are predetermined costs. But the object of standard costing differs. The differences between these two costs are:

Estimated Cost	Standard Cost
1. It is used as statistical data, and leads to a lot of guess work.	It is scientifically used, and it is a regular system of account based upon estimation and time studies.
2. Its objects are to ascertain "What the cost will be".	Its object is to ascertain "what the costs should be"
3. It gives importance to cost ascertainment for fixing sale price.	It is used for effective cost control and to take proper action to maximise efficiency.
4. It is used for a specific use; i.e., fixing sale price.	It is a continuous process of costing, and takes into account all the manufacturing processes.
5. It can be used where costing is in operation.	It can be used where standard costing is in operation.
6. It is not accurate. It is an approximation based on past experience.	As it is based on scientific analysis, it is more accurate than the estimated cost.

17.9 HISTORICAL COST AND STANDARD COST

Historical Cost	Standard Cost
1. It is an after-production-recorded cost.	It is a predetermined cost.
2. It is, actually, incurred cost.	It is an ideal cost.
3. As it relates to the past, it is not useful for cost control.	It is a future cost. It can be used for cost control.
4. It is used to ascertain the profit or the loss incurred during a period.	It is used for the measurement of operational efficiency of the enterprises.

17.10 BUDGETARY CONTROL AND STANDARD COSTING

Budgetary Cost	Standard Cost
1. It is extensive in its application, as it deals with the operation of department or business as a whole.	It is intensive, as it is applied to manufacturing of a product or providing a service.

2. Budgets are prepared for sales, production, cash etc.	It is determined by classifying recording and allocating expenses to cost unit.
3. It is a part of financial account, a projection of all financial accounts.	It is a part of cost account, a projection of all cost accounts.
4. Control is exercised by taking into account budgets and actuals. Variances are not revealed through accounts.	Variances are revealed through difference accounts.
5. Budgeting can be applied in parts.	It cannot be applied in parts.
6. It is more expensive and broad in nature, as it relates to production, sales, finance etc.	It is not expensive because it relates to only elements of cost.
7. Budgets can be operated with standards.	This system cannot be operated without budgets.

17.11. STANDARD COSTING AND MARGINAL COSTING

Standard costing is a system of accounting in which all expense: (fixed and variable) are considered for the determination of standard cost for a prescribed set of working conditions. On the other hand, marginal costing is a technique in which only variable expenses are taken to ascertain the marginal cost. Both standard costing and marginal costing are completely independent of each other and may be installed jointly. This system of joint installation may be named as Marginal Standard Costing or Standard Marginal Costing System. Variances are calculated in the same way as in standard costing system with the only difference that volume variances are absent because fixed expenses are charged in totals in each period.

17.12 STANDARD COSTING AND STANDARDISED COSTING

The term 'standardised costing' is synonymous to uniform costing. Uniform costing is a system of costing under which several undertakings use the same costing principles and practices. With the help of uniform costing, several common processes of various industrial units can be standardised which will be helpful in improving the performance of inefficient units. Both standard costing and standardized costing (i.e. uniform costing) can be used for better management of industrial units.

17.13 STANDARD COST CARD

When all the standard costs have been determined, a Standard Cost Card is prepared for each product or service. The process of setting standards for materials, labour and overheads results in the establishment of the standard cost for the product. Such a cost card shows for a specified unit of production, quantity, quality and price of each type of materials to be used, the time and the rate of pay of each type of

labour, the various operations the product would pass through, the recovery of overhead and the total cost. The build-up of the standard cost of each item is recorded in standard cost card. These details serve as a basis to measure the efficiency against which actual quantities and costs are compared. The type of standard cost card varies with the requirements of individual firm hence no uniform format can be prescribed.

17.14 LET US SUM UPS

Standard costing is a yardstick to measure the performance of a concern. Standard performance compared with actual performance and variance is found. Standard yard for materials, both in quality and price, labour both rate and hours, overheads, sales and profit are fixed. Standard costing gives more emphasis on cost than financial information. Budgetary control extensive and deals with the operation of department as a whole.

17.15 LESSON END ACTIVITIES

- 1 Define 'standard cost' and 'standard costing'.
- 2 What are the merits of standard costing?
- 3 Explain the limitations of standard costing.
- 4 What are the difference between 'standard cost' and estimated cost'?
- 5 Distinguish between budgetary control and standard costing.
- 6 How do you set standards for different elements of cost?

17.16 CHECK YOUR PROGRESS

Your answer may include the following

Advantages of standard costing

1 Cost control: Standard costing is universally recognised as a powerful cost control system. Controlling and reducing costs becomes a systematic practice under standard costing.

2 Elimination of wastage and inefficiency: Wastage and inefficiency in all aspects of the manufacturing process are curtailed, reduced and eliminated over a period of time if standard costing is in continuous operation.

3 Norms: Standard costing provides the norms and yard sticks with which the actual performance can be measured and assessed.

Limitations of standard costing

1. It is costly, as the setting of standards needs high technical skill.
2. Keeping of up-to-date standard is a problem. Periodic revision of standard is a costly thing.
3. Inefficient staff is incapable of operating this system.

17.17 CHECK YOUR PROGRESS

1. Explain the advantages & Disadvantages of Standard Costing.
2. Difference standard costing and marginal costs.

17.18 REFERENCES

1. Jain & Narang – Cost Accounting.
2. S.N. Maheswary – Management Accounting.

LESSON 18 VARIANCE ANALYSIS

Contents:

- 18.0 Aims and Objective**
- 18.1 Introduction**
- 18.2 Definition**
- 18.3 Favourable and unfavourable Variance**
 - 18.3.1 Favourable variance
 - 18.3.2 Unfavourable variance
- 18.4 Utility of variances analysis**
- 18.5 Types of Variance analysis**
- 18.6 Illustrations**
- 18.7 Let us Sum Up**
- 18.8 Lesson-End Activities**
- 18.9 Check your Progress**
- 18.10 Points for Discussion**
- 18.11 References**

18.0 AIMS AND OBJECTIVE

- i) To understand the meaning and definition of variance analysis
- ii) To know to different kinds of material variance
- iii) To study the different type of labour variance
- iv) To learn to methods of calculation of material and labour variances

18.1 INTRODUCTION

Variance analysis is the process of analysing variance by sub-dividing the total variance in such a way that management can assign responsibility for off-standard performance. It, thus, involves the measurement of the deviation of actual performance from the intended performance. That is, variance analysis is a tool to measure performances and based on the principle of management by exception. In variance analysis, the attention of management is drawn not only to the monetary value of unfavourable and favourable managerial performance but also to the responsibility and causes for the same.

After the standard costs have been fixed, the next stage in the operation of standard costing is to ascertain the actual cost of each element and compare them with the standard already set. Computation and analysis of variances is the main objective of standard costing. Actual cost and the standard cost is known as the 'cost variance'.

18.2 DEFINITION

As per I.C.M.A, Variance Analysis is "the resolution into constituent parts and explanation of variances". The definition indicates two aspects-resolutions into constituent parts is the first aspect which is nothing but subdivision of the total cost

variance. Explanation of variance includes the probing and inquiry for causes and responsible persons.

18.3 FAVOURABLE AND UNFAVOURABLE VARIANCE

Variances may be favourable or unfavourable depending upon whether the actual resulting cost is less or more than the standard cost.

18.3.1 Favourable variance:

When the actual cost incurred is less than the standard cost, the deviation is known as favourable variance. The effect of the favourable variance increases the profit. Again, favourable variance would result when the actual cost is lower than the standard cost. It is also known as positive or credit variance and viewed only as savings.

18.3.2 Unfavourable variance:

When the actual cost incurred is more than the standard cost, there is a variance, known as unfavourable or adverse variance. unfavourable variance refers to deviation to the loss of the business. It is also known as negative or debit variance and viewed as additional costs or losses.

When the profit is greater than the standard profit, it is known as favourable variance. When the profit is less than the standard profit, it is known as unfavourable variance. This favourable variance is a sign of efficiency of the organisation and the unfavourable variance is a sign of inefficiency of the organisation.

18.4 UTILITY OF VARIANCES ANALYSIS

- i) Variance analysis sub divides the total variance based on difference contributory causes. This gives a clear picture of the different reasons for the overall variance.
- ii) The sub division of variance establishes and highlights the interrelationship between different variances.
- iii) Variance analysis 'explains' the causes for each variance. It paves way for fixing responsibility for all variances.
- iv) It highlights all inefficient performances and the extent of inefficiency.
- v) It is a powerful tool leading to cost control.
- vi) It enables the top management to practice 'management by exception' by focusing on the problem areas.
- vii) It segregates variance into controllable and uncontrollable, thereby indicating where action is warranted.
- viii) It acts as the basis for profit planning
- ix) By revealing each and every deviation, along with the causes, variance analysis creates and nurtures 'cost consciousness' among the employees.

18.5 TYPES OF VARIANCE ANALYSIS

The following are the different types of variances.

- (1) Direct material cost variances
- (2) Direct labour cost variance
- (3) Overheads cost variances
- (4) Sales variances.

Material

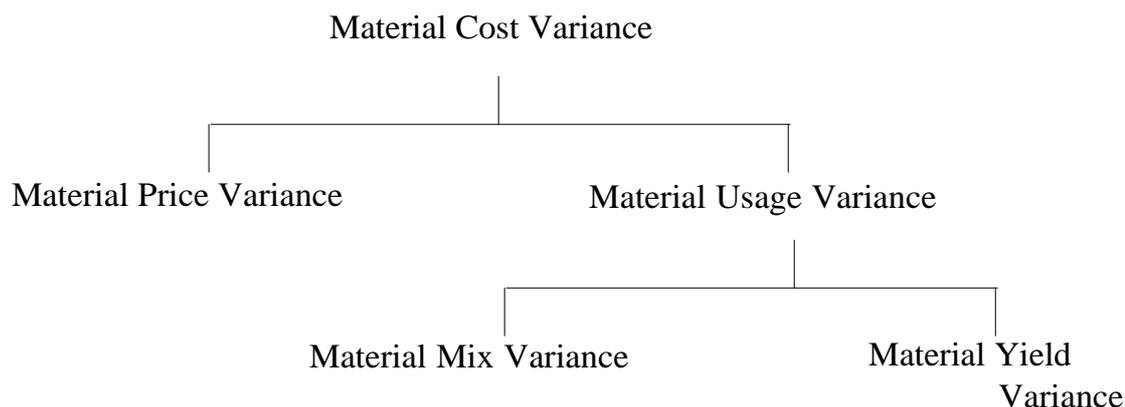
(1) **Direct Material Cost Variance (MCV):** It is the difference between standard materials cost and actual materials cost. If the actual cost is less than the standard cost, the variance is favourable and vice versa. MCV arises due to change in the price of the materials or a change in the usage of materials,

$$\text{MCV} = (\text{SQ} \times \text{SP}) - (\text{AQ} \times \text{AP})$$

SQ = Standard Quantity AQ = Actual Price

SP = Standard Price AP = Actual Price

The following chart show the components of material cost variance:



(2) **Material Price Variance (MPV):** It is that part of material cost variance which is due to the difference between the standard price specified and the actual price paid.

$$\text{MPV} = (\text{SP} - \text{AP}) \text{AQ}$$

MPV arises due to the following reasons:

- (a) Changes in the market prices of materials
- (b) Uneconomical size of purchase orders
- (c) Uneconomical transport cost
- (d) Failure to obtain cash discount
- (e) Failure to purchase materials at proper time.

MPV is mainly the responsibility of the purchase manager. However, a general increase in prices would be uncontrollable.

(3) **Material Usage Variance (MUV):** It is the difference between the standard quantity specified and the actual quantity used.

$$\text{MUV} = (\text{SQ} - \text{AQ}) \text{SP}$$

MUV may arise due to (a) carelessness in use of materials (b) loss due to pilferage (c) faulty workmanship (d) defect in plant and machinery causing excessive consumption of materials. Production manager will be responsible for material usage variance.

(4) **Material Mix Variance (MMV):** It is that part of material usage variance which arises due to change in standard and actual composition of mix.

$$\text{MMV} = (\text{RSQ} - \text{AQ}) \text{SP}; \text{RSQ} - \text{Revised Standard Quantity}$$

$$= \frac{\text{Standard Quantity}}{\text{Total Standard Quantity}} \times \text{Total Actual Quantity}$$

This variance arises in industries like chemical, rubber etc. where definite proportions of different raw materials are mixed to get a product. Variations may arise due to general shortage or non purchase of materials at the proper time.

(5) Material Yield Variance (MYV): It is a part of material usage variance. It is the difference between standard yield specified and actual yield obtained.

$$\text{MYV} = (\text{Standard yield} - \text{Actual yield}) \text{ Average standard price p.u.}$$

Or

$$(\text{Standard loss on actual input} - \text{Actual loss}) \text{ Average standard price p.u.}$$

Labour

(1) Labour Cost Variance (LCV): This is the difference between the standard wages specified and the actual wages paid.

$\text{LCV} = (\text{SH} \times \text{SR}) - (\text{AH} \times \text{AR})$. This is further divided into the following variances.

(2) Labour Rate Variance (LRV): It is the difference between the standard rate of wage specified and the actual rate paid.

$$\text{LRV} = (\text{SR} - \text{AR}) \text{ AH}$$

Labour rate variance arises due to (a) changes in the basic wage rates (b) use of different methods of wage payment (c) unscheduled overtime.

(3) Labour Efficiency Variance (LEV): It is a part of labour cost variance. It is the difference between standard labour hours specified and actual labour hours spent.

$$\text{LEV} = (\text{SH} - \text{AH}) \text{ SR}$$

This variance arises due to (a) lack of proper supervision (b) insufficient training (c) poor working conditions (d) increase in labour grades utilized

(4) Labour Mix Variance (LMV): This is the difference between the standard labour grade specified and the actual labour grade utilised.

$$\text{LMV} = (\text{RSH} - \text{AH}) \text{ SR}$$

$$\text{RSH} = \frac{\text{Standard Hours}}{\text{Total Standard Hours}} \times \text{Total Actual Hours}$$

$$\text{SH} = \text{Standard Hour} \quad \text{SR} = \text{Standard Rate} \quad \text{AH} = \text{Actual Hours}$$

$$\text{AR} = \text{Actual Rate} \quad \text{RSH} = \text{Revised Standard Hour.}$$

(5) Labour Yield Variance (LYV): It is a part of labour efficiency variance. It arises due to the difference between standard yield and actual yield.

$$\text{LYV} = (\text{Standard yield} - \text{Actual yield}) \text{ Average Standard Rate p.u.}$$

Or

$$(\text{Standard loss on actual input} - \text{Actual loss}) \text{ Average Standard Rate p.u.}$$

Over head

Overhead Cost Variance: This is the difference between the standard overhead specified and the actual overhead incurred. $\text{Overhead Cost Variance} = \text{Standard overhead} - \text{Actual overhead}$.

Generally, variances in overhead costs are divided into (a) Variable overhead variance and (b) Fixed overhead variance.

Variable overheads variance is the difference between the standard and actual variable overheads.

Fixed overheads variance is the difference between the standard and actual fixed overheads.

Overheads variance is further divided into the following categories.

(i) Budget Variance or Expenditure Variance: This represents the difference between the budgeted expenses and the actual expenses incurred. $\text{Budget Variance} = \text{Budgeted overhead} - \text{Actual overhead}$.

This variance arises due to (a) inflation (b) lack of control over expenditure (c) change in production method.

(ii) Volume Variance: It is caused due to the difference between the budgeted output. In other words, this is the difference between the standard cost of overhead absorbed in actual output and the standard allowance allowed for the output.

$\text{Volume variance} = (\text{Actual production} - \text{Budgeted production}) \text{ SR}$

(iii) Efficiency Variance: It is that portion of volume variance which is due to the difference between the budgeted efficiency (in standard units) and the actual efficiency attained.

$\text{Efficiency variance} = (\text{Actual production} - \text{Standard production}) \text{ SR}$

(iv) Capacity Variance: It is the portion of volume variance which arises on account of over or under utilization of plant and equipment. It may be caused by idle time, strike and lock out, failure of power, machine break-down etc.

$\text{Capacity variance} = (\text{Standard production} - \text{Budgeted production}) \text{ SR}$

(v) Calendar Variance: It is a part of capacity variance. This variance arises due to the difference actual working days and the budgeted working days.

$\text{Calendar variance} = (\text{Revised budgeted production} - \text{Budgeted production})$

SR.

Note: SR refers to standard overhead rate per unit.

Sales Variance

Sales variance may be sub-divided into the following variances:

(i) Sales Value Variance: The difference between actual sales and budgeted sales is termed as sales value variance.

$\text{Sales value variance} = \text{Actual sales} - \text{Standard sales}$

(ii) Sales Price Variance: It is the difference between the actual price and standard price, for actual quantity sold.

$\text{Sales price variance} = (\text{AP} - \text{SP}) \text{ Actual Quantity sold}$.

(iii) Sales Volume Variance: It is the difference between the actual quantity of sales and the budgeted quantity of sales at standard price.

$\text{Sales volume variance} = (\text{Actual Qty.} - \text{Standard Qty.}) \text{ SP}$

(iv) Sales Mix Variance: Mix variance represents that portion of volume variance which is due to a change in the proportion (or mix) of the various goods sold. This variance may arise only when more than one commodity is sold.

$\text{Sales mix variance} = (\text{Actual Qty.} - \text{Revised standard Qty.}) \text{ SP}$

Check your progress 18

Explain the following terms

- (i) Favourable variance (ii) Unfavourable variance

Notes: (a) Write your answer in the space given below.

- (b) Check your answer with the ones given at the end of this Lesson (pp. 294).

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18.6 ILLUSTRATIONS

- 1. Material Cost Variance = (SQ x SP) – (AQ x AP)
- 2. Material Price Variance = (SP – AP) AQ
- 3. Material Usage Variance = (SQ – AQ) SP
- 4. Material Mix Variance = (RSQ – AQ) SP

$$RSQ = \frac{\text{Standard Quantity}}{\text{Total Standard Quantity}} \times \text{Total Actual Quantity}$$

- 5. Material Sub-Usage Variance = (SQ – RSQ) SP

$$\text{Material Yield Variance} = \frac{(\text{Standard loss on actual input} - \text{Actual loss})}{\text{Average SP}}$$

$$\text{Average Standard Price per Unit} = \frac{\text{Total Standard Cost}}{\text{Standard Output}}$$

Abbreviations used:

- SQ = Standard Quantity SP = Standard Price
- AQ = Actual Quantity AP = Actual Price
- RSQ = Revised Standard Quantity

Illustration 1

The standard quantity and standard price of raw material required for one unit of product A are given below:

	Quantity	Standard Price
Material X	2 kgs.	Rs. 3 per kg.
Material Y	4 kgs.	Rs. 2 per kg.

The actual production and relevant data are as follows:

Output 500 units of product A

Material	Total Quantity for 500 units	Total Cost Rs.
X	1,200 kg.	3,900
Y	1,800 kg.	4,500

Calculate Cost, Price and Usage Variances.

Solution:

$$1. \text{ Material Cost Variance} = (\text{SQ} \times \text{SP}) - (\text{AQ} \times \text{AP})$$

SQ refers to standard quantity for actual production

For one unit of product A, Material X = 2 kgs.

For 500 units of product A, Material X = 500 x 2 = 1000 kgs.

For one unit of product A, Material Y = 4 kgs.

For 500 units of product A, Material Y = 500 x 4 = 2000 kgs.

Material Cost Variance:

Material X: $(1,000 \times 3) - 3,900 = \text{Rs. } 900 \text{ Adverse}$

Material Y: $(2,000 \times 2) - 4,500 = \text{Rs. } 500 \text{ Adverse}$

$$2. \text{ Material Price Variance} = (\text{SP} - \text{AP}) \text{AQ}$$

Material X : $(3 - 3.25) 1,200 = \text{Rs. } 300 \text{ Adverse}$

Material Y : $(2 - 2.50) 1,800 = \text{Rs. } 900 \text{ Adverse}$

$$3. \text{ Material Usage Variance} = (\text{SQ} - \text{AQ}) \text{AP}$$

Material X : $(1,000 - 1,200) 3 = \text{Rs. } 600 \text{ Adverse}$

Material Y : $(2,000 - 1,800) 2 = \text{Rs. } 400 \text{ Favourable}$

Note: $\text{AP} = \text{X} = 3900 \div 1200 = 3.25$; $\text{Y} = 4500 \div 1800 = 2.50$

Illustration 2

From the following information compute material variances.

	Quantity (Kilos)	Standard Unit Price Rs.	Total Rs.	Quantity (Kilos)	Actual Unit Price Rs.	Total 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	4	200	30	5	150

Solution:

$$1. \text{ Material Cost Variance} = (\text{SQ} \times \text{SP}) - (\text{AQ} \times \text{AP})$$

	A	:	$(10 \times 2) - (5 \times 3)$		
		:	$20 - 15$		= 5 (F)
	B	:	$(20 \times 3) - (10 \times 6)$		
			$60 - 60$		= 0
	C	:	$(20 \times 6) - (15 \times 5)$		
			$120 - 75$		45 (F)
	Total Material Cost Variance				50 (F)
2.	Material Price Variance	=	$(SP-AP) AQ$		
	A	:	$(2-3) 5$	=	5 (A)
	B	:	$(3-6) 10$	=	30 (A)
	C	:	$(6-5) 15$	=	15 (F)
	Total Material Price Variance				20 (A)
3.	Material Usage Variance	=	$(SQ - AQ) SP$		
	A	:	$(10-5) 2$	=	10 (F)
	B	:	$(20-10) 3$	=	30 (F)
	C	:	$(20-15) 6$	=	30 (F)
	Total Material Usage Variance				70 (F)
4.	Material Mix Variance	=	$(RSQ - AQ) SP$		
	Revises Standard Quantity	=	$\frac{SQ \text{ of each material}}{Total SQ} \times Total AQ$		
	A	:	$\frac{10}{50} \times 30 = 6$		
	B	:	$\frac{20}{50} \times 30 = 12$		
	C	:	$\frac{20}{50} \times 30 = 12$		
	Material Mix Variance				Rs.
	A	:	$(10-6) 2$	=	8 (F)
	B	:	$(20-12) 3$	=	24(F)
	C	:	$(20-12) 6$	=	48(F)
	Total Material Sub-Usage Variance				80 (F)

$$\begin{aligned}
 \text{Check: Material Cost Variance} &= \text{Material Price Variance} + \\
 &\quad \text{Material Usage Variance} \\
 50 \text{ (F)} &= 20 \text{ (A)} + 70 \text{ (F)} \\
 \text{Material Usage Variance} &= \text{Material Mix Variance} + \\
 &\quad \text{Material Sub-Usage} \\
 &\quad \text{Variance} \\
 70 \text{ (F)} &= 10 \text{ (A)} + 80 \text{ (F)}
 \end{aligned}$$

Illustration 3

The standard material cost for 100 kg. of chemical D is made up of:

Chemical A-30 kg. @ Rs. 4 per kg.

Chemical B-40 kg. @Rs. 5 per kg.

Chemical C-80 kg. @ Rs. 6 per kg.

In a batch, 500 kg. of chemical D were produced from a mix of

Chemical A - 140 kg. at a cost of Rs. 588

Chemical B- 220 kg. at a cost of Rs. 1,056

Chemical C - 440 kg. at a cost of Rs.2,860

How do the yield, mix and the price factors contribute to the variance in the actual cost per 100 kg.of chemical D over the standard cost?

Solution:

The variances are to be calculated per 100 kg. of chemical D. The actual data are given for production of 500 kg. for production of 100kg. The actual quantity will be.

Chemical A	Chemical B	Chemical C
$\frac{140kg.}{500} \times 100$	$\frac{220kg.}{500} \times 100$	$\frac{440kg.}{500} \times 100$
= 28kg.	44kg.	88kg.
Actual price per kg. $\frac{588}{140} = 4.20$	$\frac{1056}{220} = 4.80$	$\frac{2860}{440} = 6.50$

$$1. \quad \text{Material Cost Variance} = (\text{SQ} \times \text{SP}) - (\text{AQ} \times \text{AP})$$

Chemical A	:	$(30 \times 4) - (28 \times 4.20)$		
		$120 - 117.60$	=	2.40 (F)
Chemical B	:	$(40 \times 5) - (44 \times 4.80)$		
		$200 - 211.20$	=	11.20 (A)
Chemical C	:	$(80 \times 6) - (88 \times 6.0)$		
		$480 - 572$	=	92.00 (A)
Total Material Cost Variance				<u>100.80 (A)</u>

2. Material Price Variance	=	$(SP - AP) AQ$		
Chemical A	:	$(4 - 4.20) 28$	=	5.60 (A)
Chemical B	:	$(5 - 4.80) 44$	=	8.80 (F)
Chemical C	:	$(6 - 6.50) 88$	=	44.00 (A)
Total Material Price Variance			=	<u>40.80 (A)</u>

3.	Material Mix Variance	=	(RSQ – AQ) SP	
	Revised Standard Quantity (RSQ)	=	$\frac{\text{Standard Quantity}}{\text{Total Standard Quantity}} \times \text{Total Actual Quantity}$	
	Total standard quantity	=	30 + 40 + 80 = 150 kg.	
	Total actual quantity	=	28 + 44 + 88 = 160 kg.	
	RSQ for Chemical A	=	$\frac{30}{150} \times 160 = 32 \text{ kg.}$	
	Chemical B	=	$\frac{40}{150} \times 160 = 42.67 \text{ kg.}$	
	Chemical C	=	$\frac{80}{150} \times 160 = 85.33 \text{ kg.}$	
	Material Mix Variance			
	Chemical A	:	(32- 28) 4	
			= 4 x 4	= 16 (F)
	Chemical B	:	(42.67 – 44) 5	
			= -1.33 x 5	= 6.65 (A)
	Chemical C	:	(85.33-88) 6	
			= -2.67 x 6	= 16.02 (A)
	Total Material Mix Variance			Rs. <u>6.67 (A)</u>
4.	Material Sub-Usage Variance	=	(SQ – RSQ) SP	
	Chemical A	:	(30-32) 4	
			- 2 x 4	= 8.00 (A)
	Chemical B	:	(40 - 42.67) 5	
			- 2.67 x 5	= 13.35 (A)
	Chemical C	:	(80- 85.33) 6	
			- 5.33 x 6	= 31.98 (A)
	Total Material Sub-Usage Variance			<u>53.33 (A)</u>

Note: Material sub-usage variance is also called mater yield variance.

Illustration 4

Material	Qty. Kg.	Standard Price Rs.	Total Rs.	Qty. Kg.	Actual Price Rs.	Total Rs.
A	500	6.00	3,000	400	6.00	2,400
B	400	3.75	1,500	500	3.60	1,800
C	300	3.00	900	400	2.80	1,120
	1200			1300		
Less 10% Normal	120			220		
	1080		5,400	1,080		5,320

Calculate material variances

Solution

$$\begin{aligned}
 1. \quad \text{Material Cost Variance} &= (\text{SQ} \times \text{SP}) - (\text{AQ} \times \text{AP}) \\
 \text{Material A} &: (500 \times 6) - (400 \times 6) \\
 &: 3,000 - 2,400 = 600 \text{ (F)} \\
 \text{Material B} &: (400 \times 3.75) - (500 \times 3.60) \\
 &: 1,500 - 1,800 = 300 \text{ (A)} \\
 \text{Material C} &: (300 \times 3) - (400 \times 2.80) \\
 &: 900 - 1,120 = 220 \text{ (A)} \\
 \text{Total Material Cost Variance} &= \underline{\underline{80 \text{ (F)}}}
 \end{aligned}$$

$$\begin{aligned}
 2. \quad \text{Material Price Variance} &= (\text{SP} - \text{AP}) \text{ AQ} \\
 \text{Material A} &: (6 - 6) 400 = 0 \\
 \text{Material B} &: (3.75 - 3.60) 500 = 75 \text{ (F)} \\
 \text{Material C} &: (3 - 2.80) 400 = 80 \text{ (F)} \\
 \text{Total Material Price Variance} &= \underline{\underline{155 \text{ (F)}}}
 \end{aligned}$$

$$\begin{aligned}
 3. \quad \text{Material Usage Variance} &= (\text{SQ} - \text{AQ}) \text{ SP} \\
 \text{Material A} &: (500 - 400) 6 = 600 \text{ (F)} \\
 \text{Material B} &: (400 - 500) 3.75 = 375 \text{ (A)} \\
 \text{Material C} &: (300 - 400) 3 = 300 \text{ (A)} \\
 &= \underline{\underline{300 \text{ (A)}}}
 \end{aligned}$$

$$\begin{aligned} \text{Total Material Usage Variance} &= \underline{\underline{75 \text{ (A)}}} \\ 4. \text{ Material Mix Variance} &= (\text{RSQ} - \text{AQ}) \text{ SP} \\ &\text{Revises Standard Quantity} \\ &= \frac{\text{Standard Quantity}}{\text{Total Standard Quantity}} \times \text{Total Actual Quantity} \\ \text{Material A} &: \frac{500}{1200} \times 1,300 = 541.67 \text{ kg} \\ \text{Material B} &: \frac{400}{1200} \times 1,300 = 433.33 \text{ kg} \\ \text{Material C} &: \frac{300}{1200} \times 1,300 = 325.00 \text{ kg} \\ \text{Material Mix Variance} & \\ \text{Material A} &: (541.67 - 400) 6 = 850 \text{ (F)} \\ \text{Material B} &: (433.33 - 500) 3.75 = 250 \text{ (A)} \\ \text{Material C} &: (325 - 400) 3 = 225 \text{ (A)} \\ \text{Total Material Mix Variance} &= \underline{\underline{375 \text{ (F)}}} \end{aligned}$$

$$\begin{aligned} 5. \text{ Material Yield Variance} &= \\ &(\text{Standard loss on actual input} - \text{Actual loss}) \text{ Average standard price p.u} \\ \text{Standard loss on an input of 1,200kg.} &= 120 \\ \text{Standard loss on the actual input of 1,300 kg.} & \end{aligned}$$

$$= \frac{1300}{1200} \times 120 = 130 \text{ kg.}$$

$$\text{Average standard price p.u.} = \frac{\text{Total standard cost}}{\text{Standard output}}$$

$$= \text{Rs. } 5,400 \div 1080 = \text{Rs. } 5$$

$$\text{Material Yield Variance} = (130 - 220) 5 = \text{Rs. } 450 \text{ (A)}$$

Illustration 5

The standard cost of a chemical mixture is an under:

8 tons of material A at Rs.40 per ton

12 tons of material B at Rs. 60 per ton

Standard yield is 90% of input

Actual cost for a period is as under:

12 tons of material A at Rs.30 per ton

20 tons of material B at Rs. 68 per ton

Actual yield is 27 tons

Compute all material variances.

Solution:

Material Cost Variance = (SQ x SP) – (AQ x AP)

SQ for actual production:

Standard production = 90% of input = 90% of (8+12) = 18

For a standard production of 18, SQ of A = 8 tons

For the actual production of 27, SQ of A = $A = \frac{27}{18} \times 8 = 12 \text{ tons}$

For the standard production of 18, SQ of B = 12 tons

For the actual production of 27, SQ of B = $B = \frac{27}{18} \times 12 = 18 \text{ tons}$

- | | | | | |
|----|-------------------------------|-------------------------|---|---------|
| 1. | Material Cost Variance A | = (12 x 40) – (12 x 30) | | |
| | | = 480 – 360 | = | 120 (F) |
| | B | = (18 x 60) – (20 x 68) | | |
| | | = 1080 – 1360 | = | 280 (A) |
| | Total Material Cost Variance | | = | 160 (A) |
| | | | | |
| 2. | Material Price Variance | = (SP – AP) AQ | | |
| | A | = (40 – 30) 12 | = | 120 (F) |
| | B | = (60 – 68) 20 | = | 160 (A) |
| | Total Material Price Variance | | = | 40 (A) |
| | | | | |
| 3. | Material Usage Variance | = (SQ – AQ) SP | | |
| | A | = (12 – 12) 40 | = | 0 |
| | B | = (18 – 20) 40 | = | 120 (A) |
| | Total Material Usage Variance | | = | 120 (A) |

$$4. \text{ Material Mix Variance} = (\text{RSQ} - \text{AQ}) \text{ SP}$$

Revised Standard Quantity (RSQ)

$$= \frac{\text{Standard Quantity}}{\text{Total Standard Quantity}} \times \text{Total Actual Quantity}$$

$$\text{Total Std Qty} = 12 + 18 = 30; \text{ Total Actual Qty} = 12 + 20 = 32$$

$$\text{RSQ for A} = \frac{12}{30} \times 32 = 12.8$$

$$\text{RSQ for B} = \frac{18}{30} \times 32 = 19.2$$

$$\text{Material Mix Variance A} = (12.8 - 12) 40 = 32 \text{ (F)}$$

$$\text{B} = (19.2 - 20) 60 = 48 \text{ (A)}$$

$$\text{Total Material Mix Variance} = \underline{\underline{16 \text{ (A)}}}$$

5. Material Yield Variance:

(Standard loss on actual input – Actual loss) Average SP p.u.

Standard yield is 90%. That is, standard loss = 10% (100-90)

Standard loss on actual input = 10% on 32 = 3.2

Actual loss = Input – Output = 32 – 27 = 5

$$\text{Average standard price p.u.} = \frac{\text{Total standard cost}}{\text{Standard output}}$$

$$= 1560 \div 27 = 57.78$$

$$\text{Material Yield Variance} = (3.2 - 5) 57.78 = 104 \text{ (A)}$$

*Working

Standard cost	=	SQ x SP	=	
A		12 x 40	=	480
B		18 x 60	=	1,080
		<u>30</u>		<u>1,560</u>
Less Std. loss 10%		<u>3</u>		<u>-</u>
Standard output		<u>27</u>	Standard Cost	<u>1,560</u>

Labour Variances

$$1. \text{ Labour Cost Variance} = \text{Standard Cost} - \text{Actual Cost (or)}$$

$$= (\text{SH} \times \text{SR}) - (\text{AH} \times \text{AR})$$

$$2. \text{ Labour Rate Variance} = (\text{SR} - \text{AR}) \text{ AH}$$

$$3. \text{ Labour Efficiency Variance} = (\text{SH} - \text{AH}) \text{ SR}$$

$$4. \text{ Labour Mix Variance} = (\text{RSH} - \text{AH}) \text{ SR}$$

Revised Standard Hours

$$RSH = \frac{\text{Standard Hours}}{\text{Total Standard Hours}} \times \text{Total Actual Hours}$$

$$5. \text{ Labour Sub Efficiency Variance} = (\text{SH} - \text{RSH}) \text{ SR}$$

$$6. \text{ Labour Yield Variance} = (\text{Standard loss on actual input} - \text{Actual loss}) \text{ Average Standard Labour Rate}$$

$$\text{Average standard rate} = \frac{\text{Standard labour cost}}{\text{Standard output}}$$

Abbreviations used:

SH – Standard Hours SR – Standard Rate

AH – Actual Hours AR – Actual Rate

RSH - Revised Standard Hours

Illustration 6

From the following data, calculate 1. Labour cost variance 2. Rate variance 3. Efficiency variance 4. Mix variance 5. Labour sub-efficiency variance.

	Standard		Actual	
	Hours	Rate	Hours	Rate
Skilled labour	10	3.00	9,000	4.00
Semi- skilled	8	1.50	8,400	1.50
Un-skilled	16	1.00	20,000	0.90

The actual production was 1000 articles.

Solution:

$$1. \text{ Labour Cost Variance} = (\text{SH} \times \text{SR}) - (\text{AH} \times \text{AR})$$

SH refers to standard hours for actual production

SH for 1000 articles:	Skilled	10 x 1,000	=	10,000 hrs
	Semi- skilled	8 x 1,000	=	8,000 hrs
	Unskilled	16 x 1,000	=	<u>16,000 hrs</u>

 34,000 hrs

Labour Cost Variance:

Skilled	=	(10,000 x 3) – (9,000 x 4)	
		30,000 – 36,000	= 6,000 (A)
Semi-skilled	=	(8,000 x 1.50) – (8,400 x 1.50)	
		12,000 – 12,600	= 600 (A)
Unskilled	=	(16,000 x 1.00) – (20,000 x 0.90)	
		16,000 – 18,000	= 2,000 (A)
Total Labour Cost Variance			<u>8,600 (A)</u>

2. Labour Rate Variance	=	(SR – AR) AH	
Skilled	=	(3 – 4) 9,000	= 9,000 (A)
Semi-skilled	=	(1.50 – 1.50) 8,400	= 0
Unskilled	=	(1-0.90) 20,000	= 2,000 (F)
Total Labour Rate Variance			<u>7,000 (A)</u>

3. Labour Efficiency Variance	=	(SH – AH) SR	
Skilled	=	(10,000 – 9,000) 3	= 3,000 (F)
Semi-skilled	=	(8,000 – 8,400) 1.50	= 600 (A)
Unskilled	=	(16,000 – 20,000) 1	= 4,000 (A)
Total Labour Efficiency Variance			<u>1,600 (A)</u>

4. Labour Mix Variance	=	(RSH – AH) SR
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Revised Standard Hours (RSH)

$$= \frac{\text{Standard Hours}}{\text{Total Standard Hours}} \times \text{Total Actual Hours}$$

Total standard hours = 10,000 + 8000 + 16,000 = 34,000

Total actual hours = 9000 + 8,400 + 20,000 = 37,400

$$\begin{aligned} \text{RSH: Skilled} &= \frac{10,000}{34,000} \times 37,400 = 11,000 \text{ hrs} \\ \text{Semi-Skilled} &= \frac{8,000}{34,000} \times 37,400 = 8,800 \text{ hrs} \\ \text{Unskilled} &= \frac{16,000}{34,000} \times 37,400 = 17,600 \text{ hrs} \end{aligned}$$

Labour Mix Variance

$$\begin{aligned} \text{Skilled} &= (11,000 - 9,000) 3 = 6000 \text{ (F)} \\ \text{Semi-skilled} &= (8,800 - 8,400) 1.50 = 600 \text{ (F)} \\ \text{Unskilled} &= (17,600 - 20,000) 1 = 2,400 \text{ (F)} \\ \hline \text{Total Labour Mix Variance} &= 4,200 \text{ (F)} \end{aligned}$$

5. **Labour Sub-Efficiency Variance = (SH – RSH) SR**

$$\begin{aligned} \text{Skilled} &= (10,000 - 11,000) 3 = 3,000 \text{ (A)} \\ \text{Semi-skilled} &= (8,000 - 8,800) 1.50 = 1,200 \text{ (A)} \\ \text{Unskilled} &= (16,000 - 17,600) 1 = 1,600 \text{ (A)} \\ \hline \text{Total Labour Sub-Efficiency Variance} &= 5,800 \text{ (A)} \end{aligned}$$

Check:

$$\text{LCV} = \text{LRV} + \text{LEV}$$

$$8,600 \text{ (A)} = 7,000 \text{ (A)} + 1,600 \text{ (A)}$$

$$\text{LEV} = \text{LMV} + \text{LSEV}$$

$$1,600 \text{ (A)} = 4,200 \text{ (F)} + 5,800 \text{ (A)}$$

Illustration 7

The information regarding the composition and hourly wage rates of labour force engaged on a job scheduled to be completed in 30 hours are as follows:

Category of workers	Standard		Actual	
	No. of workers	Hourly wage rate per worker	No of workers	Hourly wage rate per worker
Skilled	75	Rs. 6	70	Rs. 7
Semi-skilled	45	4	30	5
Un-skilled	60	3	80	2

The work was completed in 32 hours. Calculate labour variances.

Solution:

$$\text{Labour Cost Variance} = (\text{SH} \times \text{SR}) - (\text{AH} \times \text{AR})$$

SH here refers to standard man hours.

	Standard Man hours	Actual Man Hours
Skilled	75 x 30 = 2,250	70 x 32 = 2,240
Semi- Skilled	45 x 30 = 1,350	30 x 32 = 960
Unskilled	60 x 30 = 1,800	80 x 32 = 2,560
	5400	5760

Labour Cost Variance:

Skilled	= (2,250 x 6) – (2,240 x 7)	
	13,500 – 15,680	= 2,180 (A)
Semi-skilled	= (1,350 x 4) – (960 x 5)	
	5,400 – 4,800	= 600 (F)
Unskilled	= (1,800 x 3) – (2,560 x 2)	
	5,400 – 5,120	= 280 (F)
Total Labour Cost Variance		1,300 (A)

2. Labour Rate Variance = (SR – AR) AH

Skilled	= (6 – 7) 2,240	= 2,240 (A)
Semi-skilled	= (4 – 5) 960	= 960 (A)
Unskilled	= (3 – 2) 2,560	= 2,560 (F)
Total Labour Rate Variance		640 (A)

3. Labour Efficiency Variance = (SH – AH) SR

Skilled	= (2,250 – 2,240) 6	= 60 (F)
Semi-skilled	= (1,350 – 960) 4	= 1,560 (F)
Unskilled	= (1,800 – 2,560) 3	= 2,280 (A)
Total Labour Efficiency Variance		660 (A)

4. Labour Mix Variance = (RSH – AH) SR

$$\text{RSH} = \frac{\text{Standard Hours}}{\text{Total Standard Hours}} \times \text{Total Actual Hours}$$

Revised Standard Hours (RSH)

$$\text{Skilled} = \frac{2,250}{5,400} \times 5,760 = 2,400$$

$$\text{Semi-Skilled} = \frac{1,350}{5,400} \times 5,760 = 1,440$$

$$\text{Unskilled} = \frac{1,800}{5,400} \times 5,760 = 1,920$$

Labour Mix Variance =

$$\text{Skilled} = (2,400 - 2,240) \times 6 = 960 \text{ (F)}$$

$$\text{Semi-skilled} = (1,440 - 960) \times 4 = 1,920 \text{ (F)}$$

$$\text{Unskilled} = (1,920 - 2,560) \times 3 = 1,920 \text{ (A)}$$

	960 (F)
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5. Labour Sub-Efficiency Variance = (SH – RSH) SR

$$\text{Skilled} = (2,250 - 2,400) \times 6 = 900 \text{ (A)}$$

$$\text{Semi-skilled} = (1,350 - 1,440) \times 4 = 360 \text{ (A)}$$

$$\text{Unskilled} = (1,800 - 1,920) \times 3 = 360 \text{ (A)}$$

	1,620 (A)
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Check:

$$\text{LCV} = \text{LRV} + \text{LEV}$$

$$1,300 \text{ (A)} = 640 \text{ (A)} + 660 \text{ (A)}$$

$$\text{LEV} = \text{LMV} + \text{LSEV}$$

$$660 \text{ (A)} = 960 \text{ (F)} + 1,620 \text{ (A)}$$

18.7 LET US SUM UP

Variance is the difference between standard and actual performance. If the standard cost is more than the actual cost, then this variance is called favourable variance else unfavourable variance. Material cost variance is the difference between standard material cost and actual material cost. Material cost variance arise due to change in price of material or change in usage of material. Labour variance is the difference between standard wage fixed and actual wage paid.

18.8 LESSON END ACTIVITIES

1. What is variance Analysis? What is its importance?
2. Describe to managerial use of variance analysis.
3. Describe variance analysis significance to the management.
4. The standard material cost for 100 kg of chemical D is made up of:

Chemical A: 30kgs.@ Rs.4.00 per kg.

Chemical B: 40kgs.@ Rs.5.00 per kg.

Chemical C: 80kgs.@ Rs.6.00 per kg.

In a batch of 500 kgs. Of chemical D were produced from a mix of:

Chemical A: 140 kgs. at a cost of Rs.588

Chemical B: 220 kgs. at a cost of Rs.1,056

Chemical C: 440 kgs. at a cost of Rs.2,860

How do the yield, mix and the price factors contribute to the variance in the actual cost per 100 kg of chemical D over the standard cost?

5. From the following information calculate the Materials Mixture Variance

Materials	Standard Quantity	Actual Quantity	Standard Price per unit	Actual Price per unit
A	100	150	Rs.5	Rs.5.50
B	200	250	Rs.6	Rs.6.00
C	300	400	Rs.4	Rs.3.50

6. Calculate the material (a) cost variance (b) price variance and (c) quantity variance

	Standard			Actual		
	Qty	Rate	Amount Rs.	Qty.	Rate	Amount Rs.
A	4	100	400	2	350	700
B	2	200	400	1	200	200
C	2	400	800	3	300	900
	8		1,600	6		1,800

7. A company manufactures particular product the standard material cost of which is Rs.10per unit. The following information is obtained from the cost records.

(i) Standard mix

Material	Quantity	Rate	Amount
	units	Rs.	Rs.
A	70	10	700

B	30	5	150
	<u>100</u>		<u>850</u>
Loss 15%	15		-
	<u>85</u>		<u>850</u>

(ii) Actual results for January 1987:

Material	Quantity units	Rate Rs.	Amount Rs.
A	400	11	4,400
B	200	6	1,200
	<u>600</u>		<u>5,600</u>
Loss 15%	60		-
	<u>540</u>		<u>5,600</u>

Calculate: (1) Material price variance (2) Material mix variance (3) Material usage variance (4) Material yield variance (5) Material cost variance

8. Calculate material price variance in each of the following:

- (a) Standard : 2,740 units at Rs.15 each
 Actual : 3,000 units at Rs.17 each
- (b) Standard : 5,000 units at Rs.4 each
 Actual : 2,000 units, purchased at Rs.4.5 each
 2,600 units, purchased at Rs.5 each
 1,300 units, purchased at Rs.5.5. each
- (c) Opening stock : Nil
 Purchase of material : 14,600 tons at Rs.15 per ton
 Closing stock : 1,600 tons
 Standard price : Rs.16 per ton
- (d) Standard Price per k.g. of chemical 'Y' : Rs.400
 Stock at the beginning of the period : 200kgs.

Purchase during the period : 800kgs at Rs.425 per kg.

Closing stock at the end of : 300kgs.

the period

9. From the following particulars calculate the revised standard quantity for each material and material mix variance:

Material	Standard quantity Kg.	Actual quantity Kg.	Standard price per unit Rs.
X	500	460	10
Y	300	480	12
Z	200	260	8

10. From the details given calculate:

- (a) Material cost variance
(b) Material price variance
(c) Material usage variance

Quantity of material purchased	- 3,000 units
Value of materials purchased	Rs.9,000
Standard quantity of material required per ton of output	30 units
Standard rate of materials	Rs.2.50 per unit
Opening stock of materials	Nil
Closing stock of materials	500 units
Output during the period	80 tons

11. From the following details, calculate the variances specified:

- (a) Standard material :
- Material A : 1,000 units Rs.10 each
- Material B : 2,000 units at Rs.6 each
- Standard loss : 10%
- Actual material :
- Material A : 1,200 units at Rs.9 each

Material B	:	2,100 units at Rs.7 each
Output,	:	2,800 units.

Calculate material mix and yield variances.

(b) Material used	:	
A	:	10,000kgs at Rs.10 per kg
B	:	6,000kgs at Rs.20 per kg
Output	:	14,000kgs.
Standard loss	:	10% of input

Compute material yield variance

(c) Standard mix	:	
X	:	300 units at Rs.4 each
Y	:	400 units at Rs.3 each
Z	:	500 units at Rs.2 each
Actual mix	:	
X	:	500 units at Rs.5 each
Y	:	400 units at Rs.4 each
Z	:	300 units at Rs.3 each

Calculate material mix variance.

18.9 CHECK YOUR PROGRESS

Your answer is given below

1. Favourable variance: When the actual cost incurred is less than the standard cost, the deviation is known as favourable variance. The effect of the favourable variance increases the profit. Again, favourable variance would result when the actual cost is lower than the standard cost. It is also known as positive or credit variance and viewed only as savings.

2. Unfavourable variance: When the actual cost incurred is more than the standard cost, there is a variance, known as unfavourable or adverse variance. unfavourable variance refers to deviation to the loss of the business. It is also known as negative or debit variance and viewed as additional costs or losses.

18.10 POINTS FOR DISCUSSION

1. From the following details you are required to compute material usage or quantity variance in each case separately.

(a) Standard : 400 units at Rs.10 each

Actual : 360 units at Rs.7 each

(b) Standard material for one unit of output : 3-kg at Rs.10 per kg.

Production during March 1999 : 6,000 units of output.

Materials consumed : 20,400kgs at Rs.11 per kg.

(c) Standard:

For production of 100 articles,

Material 40kgs at Rs.8 per kg.

Actual:

Output 25,000 articles

Material used 9,200kgs at Rs.9 per kg.

(d) Standard:

Material A: 40%; Material B 60% at Rs.5 and Rs.10 per unit respectively.

Standard loss 10%

Actual:

5,000 units at Rs.4 per kg.

B 5,000 unit at Rs.11 per kg.

Output 8, 100 units.

2. From the following data compute (a) Labour cost variance (b) Labour rate variance (c) Labour efficiency variance (d) Labour mix variance.

Budgeted labour composition for producing 100 units.

20 men at Rs.1.25 per hour for 25 hour

30 women at Rs.1.10 per hour for 25 hours

Actual labour composition for producing 100 units

25 men at Rs. 1.50 per hour for 24 hours.

25 women at Rs.1.20 per hour for 25 hours.

3. Calculate the labour variances from the following

Standard cost	Hours	Rate	Amount
		Rs.	Rs.
Men	800	3	2,400
Women	200	2	400
	<u>1,000</u>		<u>2,800</u>

Actual cost	Hours	Rate Rs.	Amount Rs.
Men	600	2.50	1,500
Women	500	2.00	1,500
	<u>1,100</u>		<u>2,500</u>

18.11 REFERENCES

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2. R.K. Sharma & K. Gupta – Management Accounting.

LESSON 19 MARGINAL COSTING

Contents:

- 19.0 Aims and objectives**
- 19.1 Introduction**
- 19.2 Definition of Marginal cost**
- 19.3 Definition of Marginal Costing**
- 19.4 Application of marginal costing**
- 19.5 Absorption Costing**
- 19.6 Difference between Absorption Costing and Marginal Costing**
- 19.7 Costs-Volume Profit Analysis**
- 19.8 Some important concepts of cost-volume-profit analysis**
 - 19.8.1 Fixed cost
 - 19.8.2 Variable costs
 - 19.8.3 Contribution
 - 19.8.4 Contribution to Sales $\left(\frac{C}{S}\right)$ (or) P/V (Profit Volume) Ratio
 - 19.8.5 Break even Analysis and Break even Point
 - 19.8.6 Margin of Safety
 - 19.8.7 Angle of Incidence
- 19.9 Break Even Charts**
 - 19.9.1 Advantage
 - 19.9.2 Limitations of B.E.C.
 - 19.9.3 Types of Break Even Charts
- 19.10 Illustrations**
- 19.11 Let us Sum Up**
- 19.12 Lesson-End Activities**
- 19.13 Check your Progress**
- 19.14 Points for Discussion**
- 19.15 References**

19.0 AIMS AND OBJECTIVES

- i) To study the definition of Marginal cost and marginal costing.
- ii) To know the cost volume profit analysis and some important points.
- iii) To understand the Break even chart and types of Break even charts.
- iv) To study the difference between Absorption costing and Marginal costing.

19.1 INTRODUCTION

Marginal costing is not a method of cost ascertainment like job costing or contract costing. Marginal costing is a technique of costing, which may be used with other methods of costing, viz., job process. For decision-making, it is more helpful to the management. The other names for marginal costing are direct costing, differential costing, incremental costing and comparative costing.

In marginal costing, only variable items of costs are taken into account. These variable costs will change in direct relation to the change in the volume of production or change in the production by one unit. As such, variable costs are called product

costs and are charged to production. Fixed costs are not allocated to cost unit; and these are charged directly to profit and loss account during the period and are called as period costs or capacity costs.

19.2 DEFINITION OF MARGINAL COST

Marginal cost is the additional cost of producing an additional unit of a product.

Marginal cost is defined by I.C.M.A, London as ‘the amount at any given volume of output by which aggregate costs are changed if the volume of output is increased or decreased by one unit. In practice, this is measured by the total variable costs attributable to one unit’.

19.3 DEFINITION OF MARGINAL COSTING

Marginal costing is defined by I.C.M.A. as “the 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.

19.4 APPLICATION OF MARGINAL COSTING

Marginal costing is the most powerful and popular technique in aid of managerial decision making. As already seen, it reveals the cost, volume profit relationship in all its ramifications which is useful in profit planning, selling price determination, selection of optimum volume of production, etc. Marginal costing, with its focus on variability of costs and avoidance of overhead apportionment, is so versatile that it is applied in varied circumstances and to tackle divers problems by those in charge of such situations.

The following are some of the more popular areas of application of marginal costing:

- (1) Key factor (or) Limiting factor
- (2) Make or buy decision
- (3) Fixation of selling prices
- (4) Export decision
- (5) Sales mix decision
- (6) Product elimination decision
- (7) Plant merger decision
- (8) Plant purchase decision
- (9) Further processing decision
- (10) Shut down decision

The above list is not exhaustive. There are numerous situations suitable for applying the principles of marginal costing and the situations chosen above are only a few of the popular areas of application of marginal costing.

19.5 ABSORPTION COSTING

Absorption costing is the practice of charging all costs, both fixed and variable to operations, process or products. In marginal costing, only variable costs are charged to productions.

The Institute of Cost and Management Accountants (U.K.) defines it as, “the practice of charging all costs, both variable and fixed to operations, processes or

products”. This explains why this technique is also called full costing. Administrative, selling and distribution overheads as much form part of total cost as prime cost and factory burden.

19.6 DIFFERENCE BETWEEN ABSORPTION COSTING AND MARGINAL COSTING

		Absorption Costing	Marginal Costing
1.	Charging of costs	Fixed costs form part of total costs of production and distribution.	Variable costs alone form part of cost of production, and sales whereas fixed cost are charged against contribution for determination of profit.
2.	Valuation of stocks	Stocks and work-in-progress are valued at both fixed and variable costs i.e., total costs.	Stocks are valued at variable cost only.
3.	Variation in profits	When there is no sale the entire stock is carried forward and there is no trading profit or loss.	If there is no sale, the fixed overhead will be treated as loss in the absence of contribution. It is not carried forward as part of stock value.
4.	Purpose	Absorption costing is more suitable for long-term decision making and for pricing policy over long-term.	Marginal costing is more useful for short-term managerial decision making.
5.	Emphasis	Absorption costing lays emphasis on production.	Marginal costing emphasizes selling and pricing aspects.

19.7 COSTS-VOLUME PROFIT ANALYSIS

As the term itself suggests, the cost-volume-profit (CVP) analysis is the analysis of three variables, viz., cost, volume and profit. In CVP analysis, an attempt is made to measure variations of costs and profit with volume. Profit as a variable is the reflection of a number of internal and external conditions which exert influence on sales revenue and costs.

The cost volume profit analysis helps or assists the management in profit planning. In order to increase the profit, a concern must increase the output. When the output is at maximum, within the installed capacity, it adds to the contribution. In the words of Heiser, “The most significant single factor in profit planning of the average business is the relationship between the volume of business, costs and profit.” Thereby, cost volume profit analysis is the relationship among cost, volume and profit. When volume of output increases, unit cost of production decreases, and vice versa; because the fixed cost remains unaffected. When the output increases, the fixed cost per unit decreases. Therefore, profit will be more, when sales price remains

constant. Generally, costs may not change in direct proportion to the volume. Thus, a small change in the volume will affect the profit.

The management is always interested in knowing that which product or product mix is most profitable, what effect a change in the volume of output will have on the cost of production and profit etc. All these problems are solved with the help of the cost-volume-profit analysis.

To know the cost volume profit relationship, a study of the following is essential:

1. Marginal cost analysis;
2. Break-even analysis;
3. Profit volume ratio;
4. Profit graph;
5. Key factor; and
6. Sales mix. etc.

19.8 SOME IMPORTANT CONCEPTS OF COST-VOLUME-PROFIT ANALYSIS

19.8.1 Fixed cost

It is the total of all those costs which are termed 'period costs' or 'Time costs'. They do not depend on the volume of production and sales. They must be incurred irrespective of the actual activity or operations. Examples: Office rent, Factory rent, Manager's salary, etc. i.e., fixed overheads.

The fixed costs do not normally change upto the full capacity of a firm. So unless otherwise mentioned, between '0' and 100% of a firm's capacity, fixed cost remain constant. Fixed cost are fixed in total but variable per unit.

19.8.2 Variable costs

These are the costs which increase or decrease in proportion to the output and sales. Variable costs are called 'Product costs' or 'Marginal costs. Usually they vary in direct proportion to the output. They include all the direct costs, i.e., direct material, direct wages, direct expenses and variable overheads. The variable costs vary in total but they remain constant per unit Variable costs or marginal costs are the focal point in the application of marginal costing as a technique.

19.8.3 Contribution

Contribution is the difference between sales and marginal cost. It is the contribution towards fixed costs and profit. In marginal costing technique contribution is a very important concept as it is used to find the profitability of products, processes, departments and divisions. Practically all decision are based on and oriented towards contribution.

Contribution is different from the profit which is the net margin remaining after reducing fixed expenses from the total contribution. Contribution can be ascertained as given below:

$$\text{Contribution} = \text{Selling price} - \text{Marginal cost}$$

$$\text{Contribution} = \text{Fixed expenses} + \text{Profit}$$

$$\text{Contribution} - \text{Fixed expenses} = \text{Profit}$$

19.8.4 Contribution to Sales $\left(\frac{C}{S}\right)$ (or) P/V (Profit Volume) Ratio

This is the ratio of contribution to sales. It is an important ratio analyzing the relationship between sales and contribution. A high P/V ratio indicates high profitability and low P/V ratio indicates low profitability. This ratio helps in comparison of profitability of various products. Since high P/V ratio indicates high profits, the objective of every organization should be to improve or increase the P/V ratio.

P/V Ratio can be improved by:

- (1) Decreasing the variable cost by efficiently utilizing material, machines and men.
- (2) Selecting most profitable product mix for production and sales.
- (3) Increasing the selling price per unit.

Formula for P/V Ratio

$$\begin{aligned}
 \text{P/V Ratio} &= \frac{\text{Contribution}}{\text{Sales}} &= \frac{C}{S} \\
 &(\text{or}) \\
 &= \frac{\text{Sales} - \text{Variable costs}}{\text{Sales}} &= \frac{S - V}{S} \\
 &(\text{or}) \\
 &= \frac{\text{Fixed costs} + \text{Profit}}{\text{Sales}} &= \frac{F + P}{S}
 \end{aligned}$$

When two periods' profits and sales are given, the P/V ratio is calculated as given below:

$$\text{P/V Ratio} = \frac{\text{Change in profits}}{\text{Change in sales}}$$

P/V Ratio is generally expressed as a percentage.

19.8.5 Break even Analysis and Break even Point

Break even analysis is a method of studying relationship between revenue and costs in relation to sales volume of a business enterprise and determination of volume of sales at which total costs are equal to revenue. According to Matz Curry an Frank "a break-even analysis determines at what level cost and revenue are in equilibrium". Thus, break even analysis refers to a system of determination of that level of activity where total sales are just equal to total costs. This level of activity is generally termed as break-even point (B.E.P.). At the break even point a business man neither earns any profit nor incurs any loss. Break even point is also called "No profit, no loss point" or "Zero profit & zero loss point".

Formula for calculating break even point

Break even point (in units)

$$= \frac{\text{Fixed expenses}}{\text{Selling price per unit} - \text{Marginal cost per unit}}$$

(or)

$$\frac{\text{Fixed cost}}{\text{Contribution per unit}}$$

(or)

$$\frac{\text{Break even sales value}}{\text{Selling price per unit}}$$

Break even point (in rupees)

(or)

Break even sales value

Break even sales value = Break even point in units x Selling price per unit.

$$\text{(or)} = \frac{\text{Fixed cost}}{P/V \text{ Ratio}} = \frac{F}{P/V}$$

Break even ratio: Break even ratio is the ratio between break-even sales and actual sales of a business concern. Break even ratio is ascertained by the following formula:

$$\text{Break even ratio} = = \frac{\text{Break even sales}}{\text{Actual sales}} \times 100$$

Composite Break even point

This is the combined break even point or overall break even point of a concern calculated only when a business concern makes two or more products. The composite break-even point is calculated by the following formula:

$$\text{Composite break even point in value} = \frac{\text{Total Fixed cost}}{\text{Composite } P/V \text{ Ratio}}$$

Where total fixed cost is the total fixed cost of the business concern as a whole.

Composite P/V ratio = Individual P/V Ratio x % of each product to total sales

Break even capacity or Capacity Break even point: This is expression of break even point as percentage of capacity.

$$\text{Capacity B.E.P.} = \frac{\text{B.E.P. in units}}{\text{Total capacity in units}} \times 100$$

(or)

$$= \frac{\text{Break even point in rupees}}{\text{Total capacity in rupees}} \times 100$$

19.8.6 Margin of Safety

Break even analysis includes the concept of margin of safety. Margin of safety is the difference between actual sales and break even sales. Margin of safety is calculated in rupees, units or even in percentage form. Margin of safety indicates the value/volume of sales which directly contribute to profit, as fixed costs have already been recovered at break even point. Margin of safety is calculated by the following formula:

Margin of Safety = Actual sales – Break even sales

$$\text{(or)} = \frac{\text{Profit}}{P/V \text{ Ratio}} = \frac{P}{P/V}$$

Margin of safety ratio: Sometimes margin of safety is expressed as a ratio. It is the ratio of margin of safety to actual sales.

$$\text{Margin of safety ration} = \frac{\text{Margin of safety}}{\text{Actual sales}} \times 100$$

19.8.7 Angle of Incidence

In graphic presentation of marginal cost data, i.e., a break-even chart, the total cost line and sales line cross each other. The point of their crossing is termed 'Break-even point'. The angle at which the sales line crosses the total cost line is called the 'Angle of incidence'.

'The bigger is the angle, the more will be the contribution and profit with every additional sale. Firms with higher P/V ratio and comparatively less variable costs have a higher angle of incidence. Such firm can magnify their profits in high demand conditions.

The angle of incidence at a glance can signify or reveal the ability of a firm to earn higher profits with every increase in sales.

19.9 BREAK EVEN CHARTS

The technique of break-even analysis can be made easy with the help of graph or mathematical formula. Graphical representation of break-even point is known as the break-even chart. Dr. Vance is of the opinion that "it is a graph showing the amount of fixed variable costs and the sales revenue at different volumes of operation. It shows at what volume the firm first covers all costs with revenue of break-even". B.E.C. show the profitability or otherwise of an undertaking at various levels of activity, and indicates the point at which neither profit nor loss is made. Break-even point is known as "no profit, no loss point". So the chart is also known as break-even chart. At this point, the total costs are recovered and profit begins.

19.9.1 Advantage

- i) Total cost, variable cost and fixed cost can be determined.
- ii) B.E. output or sales value can be determined.
- iii) Cost, volume and profit relationship can be studied, and they are very useful to the managerial decision-making.
- iv) Inter-firm comparison is possible.
- v) It is useful for forecasting plans and profits.
- vi) The best products mix can be selected.
- vii) Total profits can be calculated.
- viii) Profitability of different levels of activity, various products or profit, i.e., plant can be known.
- ix) It is helpful for cost control.

19.9.2 Limitations of B.E.C.

B.E.C. is constructed under some unrealistic assumptions.

- i) Constant selling price is not true.
- ii) Detailed information cannot be known from the chart. To know all the information about fixed cost, Variable cost and Selling price, a number of charts must be drawn.
- iii) No importance is given to opening and closing stocks.

- iv) Various product mix on profits cannot be studied as the study is concerned with only one sales mix or product mix.
- v) If the business conditions change during a period, the B.E.C. becomes out of data as it assumes no change in business condition.

19.9.3 Types of Break Even Charts

From the point of view of methods of preparation and purpose for which the chart is prepared, break even chart may be various types. Normally, following types are most commonly used.

- (1) Simple break-even chart
- (2) Contribution break even chart
- (3) Profit break even chart
- (4) Profit chart for product-wise analysis
- (5) Cash break even chart
- (6) Control break even chart

Check your progress 19

Explain the Break even analysis and Break even point

- Notes: (a) Write your answer in the space given below.
 (b) Check your answer with the ones given at the end of this Lesson (pp. 312).

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19.10 ILLUSTRATIONS

Illustration 1: Calculate Break-Even Point from the following particulars.

	Rs.
Fixed expenses	1,50,000
Variable cost per unit	10
Selling price per unit	15

Solution:

Calculation of Break-even point:

$$\text{B.E.P. (in units)} = \frac{\text{Fixed expenses}}{\text{Contribution per unit}}$$

Contribution per unit =
 Selling price p.u. – Variable cost p.u.
 Rs.15 – Rs.10 = Rs.5

$$\text{B.E.P. (in units)} = \frac{\text{Rs.}1,50,000}{5} = 30,000 \text{ units}$$

$$\begin{aligned} \text{B.E.P. (in rupees)} &= \text{B.E.P. in units} \times \text{Selling price per unit} \\ &= 30,000 \times \text{Rs.}15 \\ &= \text{Rs.}4,50,000 \end{aligned}$$

Illustration 2: Calculate Break-even point:

	Rs.
Sales	6,00,000
Fixed expenses	1,50,000
Variable costs:	
Direct Material	2,00,000
Direct Labour	1,20,000
Other Variable expenses	80,000

Solution:

$$\begin{aligned} \text{B.E.P. (in Rs.)} &= \frac{\text{Fixed expenses}}{\text{Contribution}} \times \text{Sales} \\ \text{Contribution} &= \text{Sales} - \text{Variable cost} \\ &= \text{Rs.}6,00,000 - \text{Rs.}4,00,000 = \text{Rs.}2,00,000 \\ &= \frac{1,50,000}{2,00,000} \times 6,00,000 = \text{Rs.}4,50,000 \end{aligned}$$

Note: When per unit cost and selling price are not given, B.E.P. can be calculated only in terms of Rupees.

Illustration - 3: From the following particulars find out the B.E.P. What will be the selling price per unit if B.E.P. is to be brought down to 9,000 units?

	Rs.
Variable cost per unit	75
Fixed expenses	2,70,000
Selling price per unit	100

Solution:

$$\begin{aligned} \text{B.E.P. (in units)} &= \frac{\text{Fixed expenses}}{\text{Contribution per unit}} \\ \text{Contribution} &= \text{Selling price p.u.} - \text{Variable cost p.u.} \\ &= \text{Rs.}100 - \text{Rs.}75 = \text{Rs.}25 \\ \text{B.E.P. (in units)} &= \frac{2,70,000}{25} = 10,800 \text{ units} \end{aligned}$$

If break-even point is brought down to 9,000 units, fixed expenses are to be recovered from 9,000 units to have no profit and no loss.

$$\begin{aligned} \text{Fixed expenses per unit} &= \frac{\text{Fixed expenses}}{\text{No. of units}} \\ &= \text{Rs.} \frac{2,70,000}{9,000} = \text{Rs.}30 \end{aligned}$$

When B.E.P. is 9,000 units, Selling price p.u. is calculated as follows:

$$\begin{aligned}\text{Selling price} &= \text{Fixed expenses} + \text{Variable expenses per unit.} \\ &= \text{Rs.30} + \text{Rs.75} = \text{Rs.105}\end{aligned}$$

Illustration 4: From the following information relating to Quick Standard Ltd., you are required to find out (a) P.V. ratio (b) Break even point (c) Profit (d) Margin of safety

Total Fixed Costs	Rs.	4,500
Total Variable cost		7,500
Total sales		15,000

(e) Also Calculate the Volume of sales to earn profit of Rs.6,000.

Solution:

$$\begin{aligned}\text{(a) Profit volume ratio} &= \frac{\text{Contribution}}{\text{Sales}} \times 100 \\ &= \frac{7,500}{15,000} \times 100 = 50\%\end{aligned}$$

$$\begin{aligned}\text{(b) Break even point (in Rs.)} &= \frac{\text{Fixed expenses}}{\text{P.V. ratio}} \\ &= \frac{4,500}{50} \times 100 = \text{Rs.9,000}\end{aligned}$$

$$\begin{aligned}\text{(c) Profit} &= \text{Sales} - \text{Total cost} \\ &= \text{Rs.15,000} - \text{Rs.12,000} = \text{Rs.3,000} \\ \text{(or)} &= \text{Contribution} - \text{Fixed expenses} \\ &= \text{Rs.7,500} - \text{Rs.4,500} = \text{Rs.3,000}\end{aligned}$$

$$\begin{aligned}\text{(d) Margin of safety} &= \text{Present sales} - \text{Break even sales} \\ &= \text{Rs.15,000} - \text{Rs.9,000} = \text{Rs.6,000}\end{aligned}$$

$$\text{(or)} = \frac{\text{Profit}}{\text{P.V. ratio}} = \frac{3,000}{50} \times 100 = 6,000$$

$$\begin{aligned}\text{(e) Sales required to earn a profit of Rs.6,000} &= \frac{\text{Fixed expenses} + \text{Desired profit}}{\text{P.V. Ratio}} \\ &= \frac{4,500 + 6,000}{50} \times 100 = \text{Rs.21,000}\end{aligned}$$

Illustration 5: 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

Solution:

(a) Sales:

Margin of safety 40% of sales

$$\text{If margin of safety is Rs.40, sales} = \text{Rs.100}$$

$$\text{If margin of safety is Rs.10,000, Sales} = 10,000 \times \frac{100}{40}$$

$$= \text{Rs.25,000}$$

(b) Break Even Sales:

$$\begin{aligned} \text{Break Even Sales} &= \text{Sales} - \text{Margin of Safety} \\ &= \text{Rs.}25,000 - \text{Rs.}10,000 = \text{Rs.}15,000 \end{aligned}$$

(c) Fixed Cost:

$$\text{P.V. ratio} = 50\%$$

It means contribution is Rs.50 when Sales are Rs.100

∴ Contribution at break even sales

$$\begin{aligned} &= \text{Break even sales} \times \text{P.V. ratio} \\ &= \text{Rs. } 15,000 \times 50\% \end{aligned}$$

$$\begin{aligned} \text{Contribution} &= \text{Rs. } 7,500 \\ \text{Less Fixed cost (?) } &= \text{Rs. } 7,500 \\ \text{Profit at B.E.P.} &= \text{Rs. } \underline{0} \end{aligned}$$

(d) Profit

$$\begin{aligned} \text{Contribution} &= \text{Sales} \times \text{P.V. ratio} \\ &= 25,000 \times 50\% \end{aligned}$$

$$\begin{aligned} \text{Contribution} &= \text{Rs. } 12,500 \\ \text{Less Fixed cost} &= \text{Rs. } \underline{7,500} \\ \text{Profit} &= \text{Rs. } \underline{5,000} \end{aligned}$$

Illustration 6: An analysis of Lalitha Manufacturing Co.Ltd. Led to the following information:

Cost elements	Variable cost (% of sales)	Fixed cost
Direct Material	32.8	
Direct Labour	28.4	
Factory Overheads	12.6	1,89,900
Distribution Overheads	4.1	58,400
Administrative Overheads	1.1	66,700

Budgeted sales are Rs.18, 50,000. You are required to determine

- (i) the break-even sales volume
- (ii) the profit at the budgeted sales volume
- (iii) the profit, if actual sales
 - (a) drop by 10%
 - (b) increase by 5% from budgeted sales.

Solution:

Percentage of variable cost of sales is 79% calculated as follows:

Direct Material	32.8% of sales
Direct Labour	28.4% of sales
Factory Overheads	12.6% of sales
Distribution overheads	4.1% of sales
Administrative overheads	1.1% of sales
Total Variable Cost	<u>79.0% of Sales</u>

Percentage of contribution to Sales = $100 - 79 = 21$

$$\begin{aligned} \text{P.V. ratio} &= \frac{\text{Contribution}}{\text{Sales}} \times 100 \\ &= \frac{21}{100} \times 100 = 21\% \end{aligned}$$

$$\begin{aligned} \text{(i) Break-even Sales Volume} &= \frac{\text{Fixed Costs}}{\text{P.V. Ratio}} \\ &= \frac{\text{Rs.}1,89,9000 + \text{Rs.}58,400 + \text{Rs.}66,700}{21\%} \\ &= 3,15,000 \times \frac{100}{21} = \text{Rs.}15,00,000 \end{aligned}$$

(ii) Profit at the budgeted sales of Rs.18,50,000:

Percentage of Contribution to Sales = 21

$$\begin{aligned} \text{Contribution at the budgetd sales} &= 18,50,000 \times \frac{21}{100} \\ &= \text{Rs.}3,88,500 \end{aligned}$$

$$\begin{aligned} \text{Profit} &= \text{Contribution} - \text{Fixed expenses} \\ &= \text{Rs.}3,88,500 - \text{Rs.}3,15,000 = \text{Rs.}73,500 \end{aligned}$$

(iii) (a) Profit is actual sales drop by 10%

	Rs.	
Budgeted Sales	=	18,50,000
Less : 10% decline	=	<u>1,85,000</u>
Actual Sales	=	<u>16,65,000</u>

	Rs.	
Contribution 21% of sales 16,65,000 x $\frac{21}{100}$	=	3,49,650
Less: Fixed expenses	=	<u>3,15,000</u>
Profit	Rs.	<u>34,650</u>

(b) Profit if actual sales increase by 5% from budgeted sales

	Rs.	
Budgeted Sales	=	18,50,000
Add: 5% increase	=	<u>92,500</u>
Actual Sales	=	<u>19,42,500</u>

	Rs.	
Contribution at 21% of sales $\frac{19,42,500 \times 21}{100}$	=	4,07,925
Less: Fixed expenses	=	<u>3,15,000</u>
Profit	Rs.	<u>92,925</u>

Illustration 7: Raj Corpn. Ltd. has prepared the following budget estimates for the year 1999-2000.

Sales (units)	15,000
Fixed Expenses	Rs. 34,000
Sales	Rs. 1,50,000
Variable costs	Rs. 6 per unit

You are required to:

- (i) Find the P/V ration, break-even point and margin of safety.
- (ii) Calculate the revised P/V ration, break-even point and margin of safety in each of the following cases:
 - (a) Decrease of 10% in selling price:
 - (b) Increase of 10% in variable costs:
 - (c) Increase of sales volume by 2,000 units:
 - (d) Increase of Rs.6,000 in fixed costs.

Solution:

(1) At the existing level:

$$\text{P.V. ratio} = \frac{\text{Contribution}}{\text{Sales}} \times 100$$

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

$$\text{Sales Units} = 15,000$$

$$\therefore \text{Selling price per unit} = \frac{1,50,000}{15,000} = \text{Rs.10}$$

$$\text{Contribution} = \text{Rs.10} - \text{Rs.6} = \text{Rs.4}$$

$$\text{P.V. ratio} = \frac{4}{10} \times 100 = 40\%$$

$$\text{B.E.P. (in units)} = \frac{\text{Fixed expenses}}{\text{Contribution per unit}}$$

$$= \frac{34,000}{4} = 8,500 \text{ units}$$

$$\text{B.E.P. (in Rs.)} = \text{B.E.P. in units} \times \text{Selling price per unit}$$

$$8,500 \times \text{Rs.10} = \text{Rs.85,000}$$

$$\text{Margin of safety} = \text{Present Sales} - \text{B.E.P. Sales}$$

$$= \text{Rs.1,50,000} - \text{Rs.85,000} = \text{Rs.65,000}$$

II. (a) Decrease of 10% in selling price:

Selling price per unit	Rs. 10
Less : 10% Reduction	<u>1</u>
Revised selling price per unit	<u>9</u>

$$\text{Contribution} = \text{Rs.9} - \text{Rs.6} = \text{Rs.3}$$

$$\text{P.V. ratio} = \frac{3}{9} \times 100 = 33\frac{1}{3}\%$$

$$\text{B.E.P. (in units)} = \frac{34,000}{3} = 11,333 \text{ units}$$

$$\begin{aligned} \text{B.E.P. (in Rs.)} &= 11,333 \times 9 = \text{Rs.}1,01,997 \\ \text{Margin of safety} &= (15,000 \times 9) - 1,01,997 \\ &= \text{Rs.}1,35,000 - \text{Rs.}1,01,997 = \text{Rs.}33,003 \end{aligned}$$

(b) Increase of 10% in variable costs:

$$\begin{aligned} \text{Variable cost per unit} &= \text{Rs. } 6.00 \\ \text{Add : 10\% increase} &= \text{Rs. } 0.60 \\ \text{Revised variable cost} &= \text{Rs. } \underline{6.60} \end{aligned}$$

$$\begin{aligned} \text{Contribution} &= \text{Rs.}10 - \text{Rs.}6.60 = \text{Rs.}3.40 \\ \text{P.V. ratio} &= \frac{3.40}{10} \times 100 = 34\% \end{aligned}$$

$$\text{B.E.P. (in units)} = \frac{34,000}{3.40} = 10,000 \text{ units}$$

$$\begin{aligned} \text{B.E.P. (in Rs.)} &= 10,000 \times 10 = \text{Rs.}1,00,000 \\ \text{Margin of safety} &= \text{Rs.}1,50,000 - \text{Rs.}1,00,000 = \text{Rs.}50,000 \end{aligned}$$

(c) Increase of sales volume by 2,000 units:

$$\begin{aligned} \text{Sales} &15,000 \text{ units} \\ \text{Add: Increase} &\underline{2,000 \text{ units}} \\ \text{Revised sales} &\underline{17,000 \text{ units}} \end{aligned}$$

$$\text{P.V. ratio} = \frac{4}{10} \times 100 = 40\%$$

$$\text{B.E.P. (in units)} = \frac{34,000}{4} = 8,500 \text{ units}$$

$$\begin{aligned} \text{B.E.P. (in Rs.)} &= 8,500 \times 10 = \text{Rs.}85,000 \\ \text{Margin of safety} &= (17,000 \times 10) - \text{Rs.}85,000 \\ &= \text{Rs.}1,70,000 - \text{Rs.}85,000 = \text{Rs.}85,000 \end{aligned}$$

(d) Increase of Rs.6,000 in fixed costs:

$$\text{P.V. ratio} = \frac{4}{10} \times 100 = 40\%$$

$$\begin{aligned} \text{Fixed costs} &= \text{Rs. } 34,000 \\ \text{Add: increase} &= \text{Rs. } \underline{6,000} \\ \text{Revised Fixed costs} &= \text{Rs. } \underline{40,000} \end{aligned}$$

$$\text{B.E.P. (in units)} = \frac{40,000}{4} = 10,000 \text{ units}$$

$$\begin{aligned} \text{B.E.P. (in Rs.)} &= 10,000 \times 10 = \text{Rs. } 1,00,000 \\ \text{Margin of safety} &= \text{Rs.}1,50,000 - \text{Rs.}1,00,000 = \text{Rs.}50,000 \end{aligned}$$

19.11 LET US SUM UP

Marginal costing techniques is helpful to management to take decision, is in which we are considering only variable cost. Cost volume profit analysis, an attempt is made to measure variations of cost and profits with volume. Break even point is a

point at which sales equal to total cost. For finding BEP, we are considering fixed cost. With the help of BEP we can find profit at desired levels.

19.11 Lesson-End Activities

1. What are the salient features of marginal costing?
 2. Distinguish between absorption costing and marginal costing by showing their major points of difference.
 3. What do you understand by 'Cost volume profit' Analysis? What is its significance?
 4. What is break even point? How do you calculate it?
 5. Explain the meaning and significance of 'Margin of Safety'.
 6. What are the limitations of break even chart? Mention the assumptions underlying a break even chart.
- 7 The following information is obtained from Ravichandran and Co. for 1993:
- | | |
|----------------|-----------|
| Sales | Rs.20,000 |
| Variable costs | Rs.10,000 |
| Fixed costs | Rs.6,000 |
- (a) Find P/V Ratio
 - (b) Break even point and
 - (c) Margin of safety at the current sales level.

8 From the following details find out

(a) Profit volume ratio	
(b) Break-even sales and	
(c) Margin of safety	
Sales	Rs. 1,00,000
Total cost	Rs.80,000
Fixed cost	Rs.20,000
Net profit	Rs.20,000

9 From the following information relating to Honest Ltd., you are required to find out:

- (a) P.V. Ratio
- (b) Break-even point
- (c) Profit
- (d) Margin of safety

	Rs.
Total fixed costs	4,500
Total variable costs	7,500
Total sales	15,000

10 From the following data calculate

- (a) Break even point (in units)
- (b) If sales are 10% and 15% above the break even volume. Determine the net profit.

Selling price per unit	-	Rs.10
Direct material per unit	-	Rs.3
Fixed overheads	-	Rs.10,000
Variable overhead per unit	-	Rs.2
Direct labour cost per unit	-	Rs.2

11 Sales Rs.1, 00,000; Profit Rs.10,000; Variable cost 70%.

Find out

- (e) P/V Ratio
- (f) Fixed cost
- (g) Sales to earn a profit of Rs.40,000

12 From the following information relating to Gowtham Ltd., you are required to find out

Sales price	-	Rs. 20 per unit
Variable manufacturing cost	-	Rs. 11 per unit
Variable selling cost	-	Rs. 3 per unit
Fixed factory overheads	-	Rs. 5,40,000 per year
Fixed selling costs	-	Rs. 2,52,000 per year

Calculate:

- (a) Break even point in volume and value;
- (b) Sales required to earn a profit of Rs. 60,000
- (c) Sales required to earn a profit of 10% of sales

13 From the following particulars you are required to determine:

- (a) Break even sales volume
- (b) the profit at the budgeted sales volume
- (c) The profit if actual sales drop by 10% over the budgeted sales.

Budgeted sales = Rs.18,50,000.

Particulars	Variable cost % of sales	Fixed Cost
Direct material	42.8	
Direct labour	18.4	
Factory overhead	10.6	2,89,900
Distribution overhead	6.1	68,000
General administrative overhead	5.1	56,000

14 The sales and profit for 1996 and 1997 are as follows:

	Sales Rs.	Profit Rs.
1996	1,50,000	20,000
1997	1,70,000	25,000

Find out:

- (a) P/V Ratio
- (b) BEP
- (c) Sales for a profit of Rs.40,000
- (d) Profit for sales of Rs.2,50,000 and
- (e) Margin of safety at a profit of Rs.50,000

19.12 CHECK YOUR PROGRESS

Your answer may be the following:

Break even analysis is a method of studying relationship between revenue and costs in relation to sales volume of a business enterprise and determination of volume of sales at which total costs are equal to revenue. According to Matz Curry and Frank “a break-even analysis determines at what level cost and revenue are in equilibrium”. Thus, break even analysis refers to a system of determination of that level of activity where total sales are just equal to total costs.

This level of activity is generally termed as break-even point (B.E.P.). At the break even point a business man neither earns any profit nor incurs any loss. Break even point is also called “No profit, no loss point” or “Zero profit & zero loss point”.

19.13 POINTS FOR DISCUSSION

1. Differentiate managerial costing & Absorption costing.
2. Explain the managerial costing techniques.

19.14 REFERENCES

1. B.K. Sharma & K. Gupta – Management Accounting.
2. S . N . M a h e s w a r i – Management Accounting.

LESSON 20 BUDGETING

Contents:

- 20.0 Objectives**
- 20.1 Introduction**
- 20.2 Meaning and Definition of Budget**
 - 20.2.1 Objectives of Budget
- 20.3 Budgeting**
 - 20.3.1 Objectives of Budgeting
- 20.4 Control**
- 20.5 Budgetary Control**
 - 20.5.1 Objectives of Budgetary Control
- 20.6 Forecast and Budget**
- 20.7 Organisation**
 - 20.7.1 Budget centre
 - 20.7.2 Budget manual
 - 20.7.3 Budget Period
- 20.8 Classification of Budgets**
 - 20.8.1 Classification according to time
 - 20.8.2 Classification based on functions
 - 20.8.3 Classification on the basis of flexibility
- 20.9 Zero Base Budgeting (Z.B.B.)**
 - 20.9.1 Process of Zero Base Budgeting:
- 20.10 Illustrations**
- 20.11 Let us Sum Up**
- 20.12 Lesson-End Activities**
- 20.13 Check Your Progress**
- 20.14 Points for Discussion**
- 20.15 References**

20.0 OBJECTIVES

- i) To know the meaning of budget, budgetary control
- ii) To understand the difference between forecast and budget
- iii) To know to different types of budgets

20.1 INTRODUCTION

Modern business world is full of competition, uncertainty and exposed to different types of risks. This complexity of managerial problems has led to the development of various managerial tools, techniques and procedures useful for the management in managing the business successfully. Budgeting is the most common, useful and widely used standard device of planning and control. The budgetary control has now become an essential tool of the management for controlling costs and maximising profit. Costs can be reduced, wastage can be prevented and proper relationship between costs and incomes can be established only when the various factors of production are combined in profitable way. The resources of a business can

be effectively utilised by efficient conduct of its operations. This requires careful working out of proper plans in advance, co-ordination and control of activities on the part of management.

A proper planning and control are essential for an efficient management. A good number of tools and devices are available. Of all these, the most important device used is budget. Cost accounting aims not only at cost ascertainment, but also greatly at cost control and cost reduction. This the management aims at the proper and maximum utilization of resources available. It is possible when there is a Pre-planning. Modern management aims that all types of operations should be predetermined in advance, so that the cost can be controlled at every step. The more important point is that the actual programme is compared with the pre-planned programme and the variances are analysed and investigated. All are familiar with the idea of budget, at every walk of life-state, firm, business etc.,

20.2 MEANING AND DEFINITION OF BUDGET:

A budget is the monetary and / or quantitative expression of business plans and policies to be pursued in the future period of time. Budgeting is preparing budgets and other procedures for planning, coordination and control or business enterprises.

I.C.M.A. defines a budget as “A financial and / or quantitative statement, prepared prior to a defined period of time, of the policy to be pursued during that period for the purpose of attaining a given objective”.

20.2.1 Objectives of Budget

1. It directs the attention of all concerned to the attainment of a common goal.
2. It leads to the disclosure of organisational weakness. The budgets are compared with actual performance; and variances, if any, are investigated.
3. It aims at careful control over the performance and cost of every function.
4. It contributes to co-ordinate efforts of all departments in order to achieve an integrated goal. Budgets grow from bottom and are controlled from top-level.

20.3 BUDGETING

Budgeting refers to the process of preparing the budgets. It involves a detailed study of business environment clearly grasping the management objectives, the available resources of the enterprise and capacity of the enterprise.

Budgeting is defined by J.Batty as under: “The entire process of preparing the budgets is known as budgeting”. In the words of Rowland and Harr: “Budgeting may be said to be the act of building budgets”.

Thus budgeting is a process of making the budget plans. Preparation of budgets or budgeting is a planning function and their implementation is a control function. ‘Budgetary control’ starts with budgeting and ends with control.

20.3.1 Objectives of Budgeting

The main objectives of budgeting are:

1. To obtain more economical use of capital.
2. To prevent waste and reduce expenses.
3. To facilitate various departments to operate efficiently and economically.

4. To plan and control the income and expenditure of the firm,
5. To create a good business practice by planning for future.
6. To fix responsibilities on different departments or heads.
7. To co-ordinate the activities of various departments.
8. To ensure the availability of working capital.
9. To smooth out seasonal variations, by developing new products.
10. To ensure the matching of sales with productions.

20.4 CONTROL

Control may be defined as “comparing operating results with the plans, and taking corrective action when results deviate from the plans”. Control is a mechanism according to which something or some one is guided to follow the predetermined course.

Control requires two things; first that there is a clear-cut and specific plan according to which any work is to proceed. Secondly, that it is possible to measure the results of operations with a view to detecting deviations. Only then action can be taken to prevent or correct deviations.

20.5 BUDGETARY CONTROL

Budgetary control is the process of preparation of budgets for various activities and comparing the budgeted figures for arriving at deviations if any, which are to be eliminated in future. Thus budget is a means and budgetary control is the end result. Budgetary control is a continuous process which helps in planning and coordination. It also provides a method of control.

Definition

According to Brown and Howard “Budgetary control is a system of coordinating costs which includes the preparation of budgets, coordinating the work of departments and establishing responsibilities, comparing the actual performance with the budgeted and acting upon results to achieve maximum profitability”.

Wheldon characterises budgetary control as planning in advance of the various functions of a business so that the business as a whole is controlled.

I.C.M.A. define budgetary control as “the establishment of budgets, relating the responsibilities of executives to the requirements of a policy, and the continuous comparison of actual with budgeted results either to secure by individual actions the objectives of that policy or to provide a basis for its revision”.

20.5.1 Objectives of Budgetary Control

Budgetary control is inevitable for policy formulation, planning, control and coordination. The essence of budgeting is to plan and control. Following are the main objectives of budgetary control.

- i) **Planning:** Budgeting ensures effective planning by setting up of budgets.
- ii) **Coordination:** Budgets are helpful in coordination of business activities.
- iii) **Efficiency and Economy:** Effective budgetary control results in cost control and cost reduction.
- iv) **Increase in Profitability:** Cost are controlled with help of budgets and profits targeted are achieved.

- v) **Anticipation of future capital expenditure:** Estimated increase in sales necessitating higher production capacity provides advance warning for the possible capital expenditure in near future.
- vi) **Control:** Controlling function is made to be effective as the control is centralised while budgets are prepared and implemented.
- vii) **Deviations:** Ascertainments of deviations is essential to fix responsibility and correct the deviations as far as possible.

20.6 FORECAST AND BUDGET

- (i) Forecast is mainly concerned with probable events; but budget is concerned with planned events.
- (ii) Forecast may be done for longer time; but budget is prepared for shorter periods.
- (iii) Forecast is only a tentative estimate and can be revised; but budget remains unchanged for the budget period.
- (iv) Forecast results in planning and the planning results in budgeting.
- (v) Forecast is the base while a budget is the structure built on the base.
- (vi) Forecast is not used for evaluating the efficiency of performance while a budget is always used for this purpose.

20.7 ORGANISATION

The following are the essentials for a sound system of budgetary control

20.7.1 Budget centre

For the purpose of effective budgetary control, budget centres are defined. A budget centre may be a department or a section of the undertaking. Separate budgets are prepared for each department and the departmental head is responsible for carrying out budgets. Departmental heads should have effective control over the execution of the budget, to prevent unfavourable variation.

20.7.2 Budget manual

It is a document which sets out the responsibilities of persons engaged in the routine work. Budget manual lays down the objectives of the organisation, responsibilities of all executives and the procedure to be followed for budgetary control. Duties, authorities, powers of each official of the different departments are clearly defined, so as to avoid conflicts among the personnel. It also specifies different forms and records to be used for the purpose of budgetary control.

20.7.3 Budget Period

This is the period or time for which the budget is prepared and remains in operation. The length of period depends on the nature of business, the production period, the control aspect etc. There is no definite rule as regards the duration of a budget period. Generally, the budget is prepared for a year, which is preferred by most concerns. For example manufacturers of consumer goods may prepare budgets for a year, whereas in industries like ship-building the period of the budget may be 5 to 10 years.

20.8 CLASSIFICATION OF BUDGETS

Budgets are classified according to their nature. The following are the different classifications of budgets.

20.8.1. Classification according to time

1. Long-term budgets
2. Short-term budgets
3. Current budgets

20.8.2. Classification based on functions

1. Functional or subsidiary budgets
2. Master budget

20.8.3. Classification on the basis of flexibility

1. Fixed budget
2. Flexible budget

20.8.1 Classification on the basis of Time

(1) **Long-term Budgets:** Long-term budgets are prepared to reflect long-term planning of the business. Generally, the long-term period varies between five to ten years. They are prepared by the top level management. Long-term budgets are prepared for specialised activities like capital expenditure, research and development, long-term finances, etc.

(2) **Short-term Budgets:** These budgets are generally for a duration of one year and are expressed in monetary terms.

(3) **Current Budgets:** The duration of current budgets is generally in months and weeks. These budgets are prepared for the current operations of the business. As per I.C.M.A. London, ‘current budget is a budget which is established for use over a short period of time and is related to current conditions’.

20.8.2 Classification on the basis of functions

(1) **Functional Budgets:** These budgets relate to various functions of the concern. Following are the commonly prepared functional budgets:

- (a) Purchase Budget
- (b) Cash budget
- (c) Production budget
- (d) Sales budget
- (e) Materials budget

(2) **Master Budget:** This budget is a summary of various functional budgets. It encompasses the activities of the whole organisation. According to I.C.M.A., London “The master budget is the summary budget incorporating its functional budgets”. Master budget is prepared to coordinate the activities of various functional departments.

20.8.3 Classification on the basis of flexibility

1. **Fixed Budget:** it is prepared for a given level of activity and remains same irrespective of change of activity.
2. **Flexible budget:** It is a budget prepared for various levels of activity by classification of expenditure under fixed, variable and semi fixed categories.

20.8.4 Some Important Budgets

(1) Sales Budget:

In the budgeting process, sales is a starting point, as sales is the key factor in many cases. W.W. Bigg Writes, “This is probably most important budget, as it is usually the most difficult of forecast to attain”.

(2) Production Budget:

This budget is based on sales budget, unless production itself is the key-factor. It shows the budgeted quantity of output to be produced during a specific period. It has two parts, one showing the output for the period and the other showing production costs. The following key elements are considered while preparing the production budget.

(3) Materials Budget:

This budget is prepared in coordination with production budget. Preparation of materials budget is useful and helpful in achieving continuous, uninterrupted production as the non-availability of materials at the right time can affect the production. Material budget consists of two parts, one is the consumption budget and another is materials purchase budget.

(4) Labour budget:

Labour budget is also a part of production budget. Labour budget is prepared by the personnel department. This budget consists of the following details:

- (1) Number of different grades of workers required
- (2) Rates of wages of workers
- (3) Labour hours needed for production.
- (4) Labour cost for the period, etc.

(5) Overhead budget:

(a) Production overhead budget: It is a budget of indirect costs in the form of indirect wages, indirect material and indirect expenses to be incurred in the factory. It is prepared with the help of production, and labour budgets. It is prepared on the basis of past year's figures and future changes expected.

(b) Administration overhead budget: This budget is prepared to estimate the expenditure to be incurred for planning, organising, direction and control functions of the management. The budget is based on the past year's expenditure incurred with expected future changes.

(c) Selling and distribution overhead budget: This budget is prepared to estimate expenditure to be incurred to sell the product and its distribution. It is based on sales budget. It is generally prepared in consultation with sales managers of each territory.

(6) Research and Development Budget

This budget is prepared to estimate the research and development expenditure to be incurred during specific period. The budget is prepared in two parts, one is for revenue expenditure and another is to estimate the capital expenditure to be incurred.

(7) Capital Expenditure Budget:

This budget is prepared to estimate the capital expenditure on fixed assets-Buildings, machinery, plant, furniture, etc. It is generally a long-term budget. It is prepared for replacement of assets, expansion of production facilities, adoption of new technologies, diversification, etc.

(8) Cash Budget:

Cash budget is an important budget. It estimates the amount of cash receipts and payments and the balance of cash during a specific budget period. The cash budget is based on forecasts of cash or estimates of cash showing what funds would be available at what times and whether the funds available would meet requirements. The objective of cash budget is to provide for all cash requirements in time and avoid accumulation of excess cash.

Methods of preparing cash budget

- (1) Receipts and payments method
- (2) Balance Sheet method
- (3) Adjusted Profit and Loss Account method.

(9) Master Budget:

A comprehensive master budget is prepared for the entire organisation, by integrating all the functional budgets of a period. The master budget is an overall plan for the guidance of the management. I.C.M.A., England, defines it as “summary budget incorporating its component functional budgets which is finally approved, adopted and employed”.

Flexible Master Budget

I.C.M.A., London defines a flexible budget as “a budget which, by recognising the difference between fixed, semi-variable and variable costs is designed to change in relation to the level of activity attained”.

Flexible budget is prepared to know the costs at different levels of activity. It is also termed as ‘variable budget’ or ‘sliding scale budget’.

Steps involved in preparing the Flexible Budgets

After completing the above mentioned preliminary steps, the following are the steps in preparing a flexible master budget.

1. **Classification of cost:** The cost is classified according to variability as variable, cost, fixed and semi variable cost.
2. **Estimation of Variable Cost:** Variable cost comprises of all those costs which vary in direct proportion to the level of activity. Usually, all the direct costs and variable portions of the indirect costs are combinedly called ‘variable cost’.
3. **Estimation of Fixed Costs:** All those expenses which remain constant irrespective of the level of activity are fixed costs. They usually include all the fixed portion of the overheads. The total of such expenses has to be estimated.
4. **Estimation of Semi-variable Cost:** It remains fixed upto a particular level of capacity and there after it increases if the activity level goes up further. The semi variable cost should be estimated for the chosen activity levels.

Presentation of Flexible Budget

The flexible budget can be presented in the following forms:

1. **In Tabular Form:** This is the most commonly used method. Under this method costs are classified under fixed variable and semi variable. These costs are estimated for different levels of activity.
2. **In Graph Form:** Here also expenses are classified as under tabular form and presented on a graph sheet.
3. **In the Form of Ratios:** This method is used by concerns with standard lines of business and the expenses are uniform. The expenses are expressed in terms of ratios or percentages of production. The ratios are generally expressed in

terms of percentages for any level with a variation of 10% say 70%, 80%, 90% and 100% etc.

20.9 Zero Base Budgeting (Z.B.B.)

The purpose of management control is to ensure better performance and better utilisation of scarce resources. Traditional budgeting fails to achieve this objective of management effectively. ‘Zero base budgeting’ provides a solution towards this end.

‘Zero base budgeting’ was originally developed by Peter A. Pyhrr at Texas Instruments. Peter A. Pyhrr has defined ZBB as “an operating, planning and budgeting process which requires 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 we should spend any money at all”.

20.9.1 Process of Zero Base Budgeting:

The following are the steps involved in ZBB.

1. Specification of decision units.
2. Development of decision packages.
3. Prioritisation of activities projects and programmes.
4. Approval and allotment of funds.

Check your progress

What are the steps involved in preparing the flexible budgets?

Notes: (a) Write your answer in the space given below.

(b) Check your answer with the ones given at the end of this Lesson (pp. 333).

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20.10 ILLUSTRATIONS

Illustration - 1

Larsen Ltd., plans to sell 1,10,000 units of a certain product line in the first fiscal quarter, 1,20,000 units in the second quarter, 1,30,000 units in the third quarter and 1,50,000 units in the fourth quarter and 1,40,000 units in the first quarter of the following year. At the beginning of the first quarter of the current year, there are 14,000 units of product in stock. At the end of each 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?

Solution:**PRODUCTION BUDGET**

	First Quarter Units	Second Quarter Units	Third Quarter Units	Fourth Quarter Units
Sales	1,10,000	1,20,000	1,30,000	1,50,000
Add: Desired closing stock				
closing stock	24,000	26,000	30,000	28,000
	1,34,000	1,46,000	1,60,000	1,78,000
Less: Opening stock	14,000	24,000	26,000	30,000
Estimated production	1,20,000	1,22,000	1,34,000	1,48,000

Illustration -2

The Sales Director of a manufacturing company reports that next year he expects to sell 50,000 units of a particular product.

The production Manager consults the Storekeeper and casts his figure as follows:

Two kinds of raw materials A and B, are required for manufacturing the product. Each unit of the product requires 2 units of A and 3 units of B. The estimated opening balances at the commencement of the next year are:

Finished product : 10,000 units

Raw Materials : 12,000 units;

B: 15,000 units

The desirable closing balances at the end of the next year are:

Finished product 14,000 units,

A: 13,000 units

B: 16,000 units

Prepare Production Budget and Materials Purchase Budget for the next year.

Solution:**Production Budget (Units)**

Estimated sales	50,000
Add: Desired closing stock	14,000
	64,000
Less: Opening stock	10,000
Estimated Production	54,000

Production Budget (Units)

	Material A	Material B
Estimated consumption 2 x 54,000 (3 x 54,000)	1,08,000	1,62,000
Add: Desired closing stock	13,000	16,000
	1,21,000	1,78,000
Less: Opening stock	12,000	15,000
Estimated purchases	1,09,000	1,63,000

Illustration - 3

Rajeswari Ltd., manufactures two products X and Y and sells them through two divisions East and West. For the purpose of submission of sales budget to the budget committee the following information has been made available:

Budgeted sales for the current year were:

Product	East	West
X	400 at Rs.9	600 at Rs.9
Y	300 at Rs.21	500 at Rs.21

Actual sales for the current year were:

Product	East	West
X	500 at Rs.9	700 at Rs.9
Y	200 at Rs.21	400 at Rs.21

Adequate market studies reveal that product X is popular but under priced. It is observed that if price of X is increased by Re.1 it will find a ready market. On the other hand, Y is over-priced to customers and market could absorb more if sales price of Y be reduced by Re.1. The management has agreed to give effect to the above price changes.

From the information based on these price changes and reports from salesman, the following estimates have been prepared by divisional managers:

Percentage increase in sales over current budget is:

Product	East	West
X	+10%	+5%
Y	+20%	+10%

With the help of an intensive advertisement campaign, the following additional sales above the estimated sales of divisional managers are possible:

Product	East	West
X	60	70
Y	40	50

You are required to prepare Budget for Sales incorporating the above estimates and also show the budgeted and actual sales for the current year.

Solution:**Rajeswari Ltd.****Sales Budget for the year.....**

		Budget for future period			Budget for current period			Actual sales for current period		
Division	Product	Quantity	Price	Value	Quantity	Price	Value	Quantity	Price	Value
East	X	500	Rs. 10	Rs. 5,000	400	Rs. 9	3,600	500	Rs. 9	4,500
	Y	400	20	8,000	300	21	6,300	200	21	4,200
Total (A)		900		13,000	700		9,900	700		8,700
West	X	700	10	7,000	600	9	5,400	700	9	6,300
	Y	600	20	12,000	500	21	10,500	400	21	8,400
Total (B)		1,300		19,000	1,100		15,900	1,100		14,700
Total	X	1,200	10	12,000	1,000	9	9,000	1,200	9	10,800
Total	Y	1,000	20	20,000	800	21	16,800	600	21	12,600
Total (A+B)		2,200		32,000	1,800		25,800	1,800		23,400

Working

Budget for future period.

East : Product X 400 + (10% increase) 40 + 60 = 500 units

Product Y 300 + (20% increase) 60 + 40 = 400 units

West : Product X 600 + (5% increase) 30 + 70 = 700 units

Product Y 500 + (10% increase) 50 + 50 = 600 units

Illustration - 4

Summarised below are the Income and Expenditure forecasts of Jothi Ltd. for the months of March to August, 2000:

Month	Sales (all credit)	Purchases (all credit)	Wages	Manufacturing Expenses	Office Expenses	Selling Expenses
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
March	60,000	36,000	9,000	4,000	2,000	4,000
April	62,000	38,000	8,000	3,000	1,500	5,000
May	64,000	33,000	10,000	4,500	2,500	4,500
June	58,000	35,000	8,500	3,500	2,000	3,500
July	56,000	39,000	9,500	4,000	1,000	4,500
August	60,000	34,000	8,000	3,000	1,500	4,500

You are given the following further information.

- (a) Plant costing Rs.16,000 is due for delivery in July payable 10% on delivery and the balance after three months.
- (b) Advance Tax of Rs.8,000 is payable in March and June each.
- (c) Period of credit allowed (i) by suppliers 2 months and (ii) to customers 1 month.
- (d) Lag in payment of manufacturing expenses $\frac{1}{2}$ month.
- (e) Lag in payment of all other expenses 1 month.

You are required to prepare a cash budget for three months starting on 1st May, 2000 when there was a cash balance of Rs.8,000.

Solution:

Jothi Limited

Cash Budget for the quarter ended 31 July, 2000

	May Rs.	June Rs.	July Rs.
Receipts:			
Opening Balance	8,000	15,750	12,750
Debtors	62,000	64,000	58,000
Total (A)	70,000	79,750	70,750
Payments:			
Creditors	36,000	38,000	33,000
Wages	8,000	10,000	8,500
Manufacturing Expenses	3,750	4,000	3,750
Office Expenses	1,500	2,500	2,000
Selling Expenses	5,000	4,500	3,500
Advance Tax	-	8,000	-
Delivery of Plant (10% Payment on delivery)	-	-	1,600
Total (B)	54,250	67,000	52,350
Closing Balance (A-B)	15,750	12,750	18,400

Illustration- 5

The expenses for budgeted production of 10,000 units in a factory are furnished below:

	Per Unit
	Rs.
Material	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	5
Total Cost per unit	155

Prepare a budget for production of:

- (a) 8,000 units
- (b) 6,000 units
- (c) indicate cost per unit at both the levels.

Assume that administration expenses are fixed for all levels of production.

Solution**Flexible Budget**

	10,000 Units		8,000 Units		6,000 Units	
	Per Unit Rs.	Total Amount Rs.	Per Unit Rs.	Total Amount Rs.	Per Unit Rs.	Total Amount Rs.
Production Expenses:						
Materials	70.00	7,00,000	70.00	5,60,000	70.00	4,20,000
Labour	25.00	2,50,000	25.00	2,00,000	25.00	1,50,000
Overheads	20.00	2,00,000	20.00	1,60,000	20.00	1,20,000
Direct variable expenses	5.00	50,000	5.00	40,000	5.00	30,000
Fixed Overheads: (Rs.1,00,000)	10.00	1,00,000	12.50	1,00,000	16.667	1,00,000

Selling Expenses:						
Fixed	1.30	13,000	1.625	13,000	2.167	13,000
Variable	11.70	1,17,000	11.700	93,600	11.700	70,200
Distribution Expenses:						
Fixed	1.40	14,000	1.750	14,000	2.334	14,000
Variable	5.60	56,000	5.600	44,800	5.600	33,600
Administration Expenses	5.00	50,000	6.250	50,000	8.333	50,000
	155.00	15,50,000	159.425	12,75,400	166.801	10,00,800

Working:

Fixed expenses remain fixed irrespective of the level of output.

Selling expenses Rs.13; Variable expenses per unit is constant.

$$\text{Fixed } 10\% \left(\text{i.e. } 13 \times \frac{10}{100} \right) = \text{Rs.}1-30.$$

$$\text{For } 10,000 \text{ units} = 10,000 \times 1.30 = \text{Rs.}13,000$$

$$\text{Variable } 90\% \left(\text{i.e. } 13 \times \frac{90}{100} \right) = \text{Rs.}11.70$$

Illustration-6

Draw up a flexible budget for overhead expenses on the basis of the following data and determine the overhead rates at 70%, 80% and 90% plant capacity.

	At 70% Capacity Rs.	At 80% Capacity Rs.	At 90% Capacity Rs.
Variable Overheads:			
Indirect labour	-	12,000	-
Store including spares	-	4,000	-
Semi-Variable Overheads:			
Power (30% fixed, 70% variable)	-	20,000	-
Repairs and maintenance (60% fixed, 40% variable)	-	2,000	-
Fixed Overheads:			
Depreciation	-	11,000	-
Insurance	-	3,000	-
Salaries	-	10,000	-
Total Overheads	-	62,000	-
Estimated direct labour hours:		1,24,00 hrs.	

Solution:**Flexible Budget for the period**

	At 70% Capacity	At 80% Capacity	At 90% Capacity
	Rs.	Rs.	Rs.
Variable Overheads:			
Indirect labour	10,500	12,000	13,500
Stores including spares	3,500	4,000	4,500
Semi- Variable Overheads:			
Power- Fixed (30%)	6,000	6,000	6,000
Variable (70%)	12,250	14,000	15,750
Repairs and Maintenance			
Fixed (60%)	1,200	1,200	1,200
Variable (40%)	700	800	900
Fixed Overheads:			
Depreciation	11,000	11,000	11,000
Insurance	3,000	3,000	3,000
Salaries	10,000	10,000	10,000
Total Overheads	58,150	62,000	65,850
Estimated direct labour hours	1,08,500	1,24,000	1,39,500
Direct labour hour rate	Rs.0.536	Rs.0.500	Rs.0.472

Working:

Direct labour rates have been computed as follows:

$$\text{At 70\% capacity} = \frac{\text{Rs.}58,150}{1,08,500 \text{ hrs.}} = \text{Re. } 0.536$$

$$\text{At 80\% capacity} = \frac{\text{Rs.}62,000}{1,24,000 \text{ hrs.}} = \text{Re. } 0.500$$

$$\text{At 90\% capacity} = \frac{\text{Rs.}65,850}{1,39,500 \text{ hrs.}} = \text{Re. } 0.472$$

20.11 LET US SUM UP

Budget is a technique in the hands of management to control costs. Budgeting control starts with budgeting and ends with control. Every department heads are asked to prepare budget of there own departments. After the budget period the budgeted performance is compared with actual performance. It a concern unable to attain the budgeted performance, then they analyse the causes of non-attainment of budgeted performance.

20.12 Lesson-End Activities

1. Define 'Budget', 'Budgeting' and 'Budgetary control'.
2. Describe the objectives of budgetary control.
3. Distinguish between forecasts and budgets.
4. What are the essential requisites for successful implementation of a budgetary control system?
5. Briefly explain the different classifications of budgets.
6. What is Z.B.B? Describe the process of preparing Z.B.B.
- 7 The following figures relating to product 'Duper' for the quarter ending 31.3.2001 are available:

Budgeted sales : January 3,00,000 units

February 2,40,000 units

March 3,60,000 units

Stock position : 1-1-2001 – 50% of January's budgeted sales.

31.3.2001 – 80,000 units

31.1.2001 – 40% of February's budgeted sales

28-2-2001 – 60% of March's budgeted sales.

Your are required to prepare a production budget for the quarter ending 31.3.2001.

7. Prabu Engg. Co. Ltd. Manufactures 2 product X and Y. An estimate of the number of units to be sold in the first 7 months of 2002 are given below:

Month	X	Y
Jan.	5,000	14,000
Feb.	6,000	14,000
Mar.	8,000	12,000
Apr.	10,000	10,000
May	12,000	8,000
June	12,000	8,000
July	10,000	9,000

It is anticipated that there will be no work-in-progress at the end of any month and finished units are equal to half the anticipated sales for the next month will be in

stock at the end of each month (including Dec.2001). You are required to prepare a production budget showing the number of units to be manufactured each month.

9. Draw a material procurement budget [quantitative] from the following information Estimated sales of a product 40,000 units. Each unit of the product requires 3 units of material A and 5 units of material B.

Estimate opening balances at the commencement of the next year.

Finished product	5,000 units
------------------	-------------

Material A	12,000 units
------------	--------------

Material B	20,000 units
------------	--------------

Materials on order

Material A	7,000 units
------------	-------------

Material B	11,000 units
------------	--------------

The desirable closing balances at the end of the next year.

Finished product	7,000 units
------------------	-------------

Material A	15,000 units
------------	--------------

Material B	25,000 units
------------	--------------

Material on order

Material A	8,000 units
------------	-------------

Material B	10,000 units
------------	--------------

10. The sales director of Future Problem & Co. reports that next year he expects to sell 1,00,000 units of a particular product. The Production Manager consults the store keeper and casts his figures as follows:

Two kind of raw materials 'P' and 'Q' are required for manufacturing the product. Each unit of the product requires 2 units of P and 3 units of Q. The estimated opening balances at the commencement of next year are

Finished product – 20,000 units

Raw material 'P' – 24,000 units

Raw material 'Q' – 30,000 units

The desirable closing balances at the end of next year are:

Finished product – 28,000 units

Raw material 'P' – 26,000 units

Raw material 'Q' – 32,000 units

Prepare production budget and materials purchase budget for the next year.

11. Retail Traders Ltd., manufactures two products 'S' and 'T' and sells them in tow markets 'East' and 'West', Normal sales estimates prepared by the marketing department for the year 1999 bases on the reports of regional managers are as follows:

Product S: East 12,000 units; West 20,000 units

Product T: East 8,000 units; West 6,000 units

Selling price: S Rs.100 per unit; T Rs.200 per unit.

A special incentive system is proposed by the director of marketing for the salesman in east zone which is expected to push up the estimated sales of 'S' and 'T' by 20% in that zone. The advertising department has finalised an intensive compaign in west zone which is estimated to get additional sales of 2,000 units and 1,500 units of products 'S' and 'T' respectively in the West Zone.

12. Velavan Bros. sells two products R and P which are manufactured in one plant. During the year 1989 it plant to sell the following quantities of each product.

	Sales Budget units			
	First quarter	Second quarter	Third quarter	Fourth quarter
Product R	90,000	2,50,000	3,00,000	80,000
Product P	80,000	75,000	60,000	90,000

Each of these two products is sold on a seasonal basis. Velavan Bros. plans to sell product 'R' throughout the year at a price of Rs.10 per unit and product 'P' at a price of Rs.20 per unit.

A study of the past experience reveals that Velavan Bros. has lost 3% of its billed revenue each year because of returns, (constituting 2% of loss of revenue) allowances and bad debts (1% loss).

Prepare a sales budget incorporating the above information.

13. A firm expects to have Rs.30.,000 on 1st May 2002 and requires you to prepare an estimate of the cash position during the 3 months May to July 2002. The following information is supplied to you.

Month	Sales Rs.	Purchases Rs.	Wages Rs.	Factory expenses Rs.	Office expenses Rs.	Selling expenses Rs.
March	40,000	24,000	6,000	3,000	4,000	3,000
April	46,000	28,000	6,500	3,500	4,000	3,500
May	50,000	32,000	6,500	4,000	4,000	3,500
June	72,000	36,000	7,000	4,400	4,000	4,000
July	84,000	4,000	7,250	4,250	4,000	4,000

Other information:

- (i) 25% of the sale is for cash, remaining amount is collected in the month following that of sale.
- (ii) Suppliers supply goods on two months credit.
- (iii) Delay in payment of wages and all other expenses: One month
- (iv) Income tax of Rs.10,000 is due to be paid in July.
- (v) Preference shares dividend of 10% on Rs.1,00,000 is to be paid in May.

14. Prepare a cash budget for the months of May, June and July 2003 on the basis of the following information:

(a) Income and Expenditure forecasts:

Month 2003	Credit Sales Rs.	Credit purchases Rs.	Wages Rs.	Manufacturing expenses Rs.	Office expenses Rs.	Selling expenses Rs.
March	60,000	36,000	9,000	4,000	2,000	4,000
April	62,000	38,000	8,000	3,000	1,500	5,000
May	64,000	33,000	10,000	4,500	2,500	4,500
June	58,000	35,000	8,500	3,500	2,000	3,500
July	56,000	39,000	9,500	4,000	1,000	4,500
August	60,000	34,000	8,000	3,000	1,500	4,000

(b) Cash balance on 1st May 2003 Rs.8,000.

(c) Plant costing Rs.16,000 is due for delivery in July: Payable 10% on delivery and the balance after 3 months.

(d) Advance tax of Rs.8,000 each is payable in March and June.

(e) Period of credit allowed (i) by supplier-two months and

(ii) to customers- one month.

(f) Lag in payment of manufacturing expenses – $\frac{1}{2}$ month.

(g) Lag in payment of office and selling expenses – 1 month.

15. The expenses budgeted for production of 10,000 units in a factory are furnished below:

	Per unit Rs.
Materials	70
Labour	25
Variable overhead	20
Fixed overhead (Rs.1,00,000)	10
Variable expenses (Direct)	5
Selling expenses (10% fixed)	13
Distribution expenses (20% fixed)	7
Administration expenses (50,000)	5
Total cost per unit (to make or sell)	<u>155</u>

Prepare a flexible budget for the production of (a) 8,000 units and (b) 6,000 units.

16. On the basis of the following particulars, draw up a flexible budget for overhead expenses and determine the overhead rates at 70%, 80% and 90% plant capacity.

Plant Capacity

	70%	80%	90%
	Rs.	Rs.	Rs.
Variable overheads:			
Indirect labour	-	12,000	-
Indirect materials	-	4,000	-
Semi-variable overheads:			
Power (30% fixed)	-	20,000	-
Repairs (40% fixed)	-	2,000	-
Fixed overheads:			
Depreciation	-	11,000	-
Insurance	-	3,000	-
Salaries	-	10,000	-
Total overhead expenses		62,000	
Estimated direct labour hours		1,24,000	

20.13 CHECK YOUR PROGRESS

Your answer may include the following:

1. Classification of cost: The cost is classified according to variability as variable, cost, fixed and semi variable cost.

2. Estimation of Variable Cost: Variable cost comprises of all those costs which vary in direct proportion to the level of activity. Usually, all the direct costs and variable portions of the indirect costs are combinedly called 'variable cost'.

3. Estimation of Fixed Costs: All those expenses which remain constant irrespective of the level of activity are fixed costs. They usually include all the fixed portion of the overheads. The total of such expenses has to be estimated.

4. Estimation of Semi-variable Cost: It remains fixed upto a particular level of capacity and there after it increases if the activity level goes up further. The semi variable cost should be estimated for the chosen activity levels.

20.14 POINTS FOR DISCUSSION

1. What are the essential for a sound system of Budgetary Control.
2. Explain the concept of Budget & Budgetary Control.

20.15 REFERENCES

1. B.K. Sharma & K. Gupta – Management Accounting.
2. S.N. Maheswari – Management Accounting.