SYLLABUS
B.B.A. III SEM
Subject – Business Costing

UNIT – I	Basics of Costing: Meaning and definition of Cost Accounting, Concepts of Cost ,Cost Object, Cost Center and Profit Center, Cost Control and Cost Reduction Classification of Costs, Overview of Cost Accounting Standards.
UNIT – II	Cost Elements: Material Cost- purchase procedure, store keeping and stock control, pricing issue of material and accounting thereof, perpetual inventory and physical stock taking, identification of slow, non-moving and fast moving items, ABC analysis, JIT system, level of inventories and economic order quantity, analysis, investigation and corrective steps for treatment of stock discrepancies – control through other means.

Unit – 1

Terminology

Cost:-The amount of expenditure (actual or notional) incurred on, or attributable to, a specified thing or activity.

Costing -

Costing relates to the determination of cost of a product manufactured or service rendered. In order to ascertain cost, it involves system, methods and techniques of accumulation, classification and analysis of cost.

Cost Accounting: - "The process of accounting for cost from the point at which expenditure is incurred or committed to the establishment of its ultimate relationship with cost centres and cost units.

The term 'cost Accountancy' includes (i) Costing and (ii) Cost Accounting. Its purposes are (i) cost-control, and (ii) profitability-ascertainment and serves as an essential tool of the management for decision-making.

Cost Centre

Cost Centre is defined as "a location or person or place or machine or item of equipment or thing for which cost can be ascertained and used for the purpose of cost control." Cost centre can be classified as:

1. Process cost centre is one in which a specific process or a continuous sequence of operations is carried out on a regular basis.
2. Production cost centre is one in which production activity is carried where the shape of raw material is converted into a finished product.
3. Service cost centre are those which render services to the other cost centres. For examples a maintenance & repair department, store department etc.
4. Impersonal cost centre is one which consists of a location or item of equipment (or group of these).
5. Personal cost centre is one which consists of a person or group of persons.
6. Operation cost centre is one which consists of those machines and/or persons carrying out similar operations.

Profit Centre

It means a centre responsible for adopting ways and avenues to earn maximum possible profit on a product or any other activity of business, by making market surveys, suggests localities for publicity, helps to formulate sales policies and suggests to add more values to the product at the same or cheaper costs.

Cost Unit

Cost unit may be defined as "a quantitative unit of product or service in relation to which costs are ascertained."

Concept

Broadly speaking, the term 'Cost Accounting is a combination of two words, i.e., 'COST' AND 'ACCOUNTING'

In simple words, cost may be defined as the amount of resources sacrificed or given up to achieve specific objectives, which may be the acquisition of goods or services. In other words, Cost means the amount of expenditure (actual or national) incurred on, attributable to a thing.

On the other hand, Accounting is an important service activity in business and is concerned with the collecting, recording, evaluating and communicating the results of the past events. The history of accounting development reflects its changing role in response to the changing business and social needs. It can be perceived as an information system, which has its inputs, processing methods and outputs. The usefulness of accounting lies in its capacity to provide information to various shareholders, in business so that they could arrive at the correct decisions. Though accounting has been variously defined, its commonly accepted definition as given by the American institute of certified public manner and in terms of money, transaction and events which are, in part at least, of a financial character and interpreting the results thereof."

Meaning of Cost Accounting
The industrial revolution in England presented a challenge to the development of accounting as a tool of industrial management. Costing techniques were developed as guides to management actions. The increasing awareness on the part of entrepreneurs and industrial managers for using scientific principles of a management in the wake of scientific management movement led to the development of cost accounting. Cost accounting deals with the controlling them and evaluating productivity of the enterprise.

Cost accounting either to focused mainly on ascertainment of cost but with the advent of globalization, entry of multinationals and increase in competition and cost accountants are concentrating on cost of reduction through adopting stringent measures of cost control. Cost accounting thus has come serve the twin objectives of, (i) Cost ascertainment and (ii) Cost reduction. It is playing both service and advisory and economic decisions.

1. Ascertainment of Costs – It refers to the collection and analysis of cost and the linking up of production with the expenses at different stages of operations.
2. Controlling the costs – cost control aims at guiding the actual towards the targets, regulating the actual if they vary from the targets; and this is done through executive action. It is exercised through techniques such as standard costing, budgetary control etc.

Thus, cost accounting is a formal system of accounting for costs by means of which costs of products or services are ascertained and controlled. According to Sir Wheldon, cost accounting is "the application of accounting and costing principals, methods and techniques in the ascertainment of costs and analysis of saving or excesses as compared with previous experience of standards."

Definitions of cost Accounting
Important definitions of the term cost accounting are as under –

1. According to R.N. Carter, cost accounting is defined as, "a system of recording in accounts the materials used and labour employed in the manufacture of a certain commodity or on a particular job."
2. According to kohler, "Cost Accounting is the branch of accounting dealing with the classification, recording, allocation, summarization and reporting of current and prospective purpose."
3. According to Nichola, "Cost Accounting is a system of cost accumulating and classification for product costing and managerial planning, control and decision-making purposes."
4. According to Sickle, "Cost Accounting is a science of recording and presenting business transactions pertaining to the production of goods and services, whereby these records become a method of measurement and a means of control."
5. According to W.W. Bigg, "Cost Accounting is the provision of such analysis and classification of expenditure as will enable the total cost of any particular unit of production to be ascertained with reasonable degree of accuracy and at the same time to disclose exactly how such total cost is constituted.

NATURE AND CHARACTERISTICS OF COST ACCOUNTING

1. Cost accounting is a special branch of accounting having its own specific significance based on double entry system.
2. It ascertains cost of products and services through the process of accumulation, classification, analysis and recording.
3. It determines the cost of incomplete work or job.
4. The extensive use of this system involves application of statistical data, control methods & techniques and determining profitability.
5. This system provides measures for control and guidance for various levels of management.
6. Helpful in decision making process.

Scope of Cost Accounting

The scope of cost accounting is very wide and includes the following –

1. Costing – It refers to the techniques and processes of ascertaining costs. It involves systems, methods and techniques to accumulation, analysis and appropriate allocation of expenditure incurred in respect of a product or service.
2. Accounting – It is the science which records and determines scientifically the cost of manufacturing goods or rendering service per unit control and guide the persons involved in the organization. It helps thus, cost accounting in the formal mechanism by which cost data are provided for ascertaining and controlling the costs of products or services.
3. Cost Control – Cost control involves the setting up of targets for expenses and production, measurement of performance through, comparison of actual with targets, to ascertain merit of the variances, analysis of variances and inctialing corrective action to eliminate redundancies.
4. Budgetary Control – It is a system where by the budgets are used as a means of planning and controlling costs. Budgetary control is the establishment of budgets relating to the responsibilities of executives to the requirement of a policy and the continuous comparison of actual with budgeted results, either to secure by individual action the objective of that policy or to provide a basis for its revision. It involves the establishment of budget for each section of the organization, measurement of the actual performance with reference to the budgeted performance the ascertainment of deviations and taking suitable actions to remedy the defects, if any.
5. Cost audit – It is the verification of the correctness of cost accounts and to ensure adherence to the cost accounting plan. The purposes of the cost audit is to endure that he figures as shown by cost accounts are correct and that cost accounts, cost centres and cost units have been properly defined and charged.

OBJECTS AND FUNCTIONS OF COST ACCOUNTING

i. To ascertain the cost per unit of the different products manufactured by a business concern.
ii. To advise management on future expansion policies and proposed capital projects.
iii. To organize the internal audit system to ensure effective working of different departments.
iv. To help in supervising the working of punched card accounting or data processing through computers.
v. Provide useful data to the management for taking decisions.
vi. To find out costing profit or loss by identifying with revenues the cost of those products or services To provide specialized services of cost audit in order to prevent the errors and frauds and to facilitate prompt and reliable information to the management.
vii. To organize cost reduction programmes with the help of different departmental managers.
viii. To provide requisite data and serves as a guide to price fixing of products manufactured or services rendered.
ix. To help in the preparation of budgets and implementation of budgetary control.

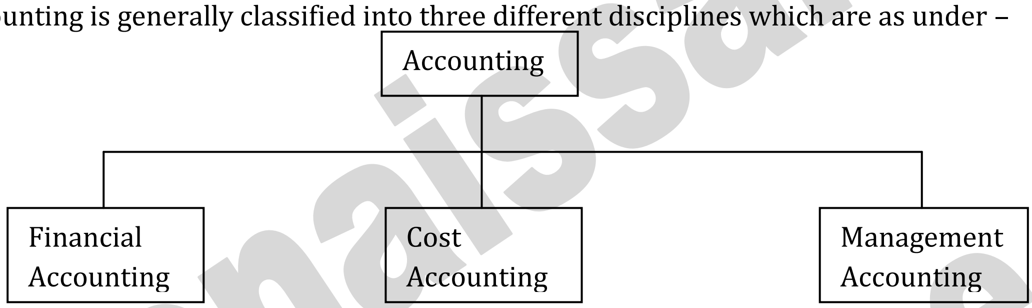
x. To guide management in the formulation and implementation of incentive bonus plans based on productivity and cost savings.
xi. To supply useful data to the management to take various financial decisions such as introduction of new products, replacement of labour by machine etc.
xii. To organize an effective information system so that different levels of management may get required information at the right time in right form for carrying out their individual responsibilities in an efficient manner.

TECHNIQUES AND METHODS OF COSTING

1. Historical Costing. "The ascertainment of costs after they have been incurred." Under this method all the expenses incurred on the production are first incurred and then the costs are ascertained.
2. Standard costing. "The preparation and use of standard costs, their comparison with actual costs and the analysis of variances to their causes and points of incidence."
3. Marginal Costing. "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."
4. Direct Costing. "The practice of charging all direct costs to operations, processes or products, leaving all the indirect costs to be written off against profits in the period in which they arise."
5. Absorption Costing. "The practice of charging all costs, both variable and fixed, to operations, processes or products."
6. Uniform Costing. "The use by several undertakings of the same costing principles and/or practices."

Classification of Accounting

The accounting is generally classified into three different disciplines which are as under –



1. Financial Accounting – IT deals with preparation of Trial Balance, Profit and Loss account and Balance sheet. It shows the amount of profit earned or loss suffered during a particular period.
2. Cost Accounting – It shows classification and analysis of costs on the basis of functions, processes, products, centres etc. It also deals with cost computations, cost savings, cost reduction etc.
3. Management Accounting – It deals with the processing of data generated in financial accounting and cost accounting of managerial decision-making. It also deals with application of managerial economics concepts for decision-making.

Distinction between cost Accounting and Management Accounting

The term "Cost accounting" and "management accounting" have sometimes been used synonymously by any accounts in recent years. But these two systems of accounting are not one and the same thing. Although over the years, the subject matter of cost accounting has broadened, it is, concerned mainly with the techniques of product costing procedures and related information processing. It helps the management in planning and controlling costs related to both production and distribution activities.

By nature, management accounting refers to the reporting system designed to cater to the decisional and executional needs of management. The accounting statements and reports in management accounting are situation-specific and are prepared with respect to a specific problem, situation or decision.

The points of difference between Cost Accounting and Management Accounting are under –

1. Origin and Development – Cost Accounting owes its origin to Industrial Revolution. Financial accounting proved inadequate to satisfy the information needs (about costs) of the management. Cost accounting was evolved as a necessary adjunct of financial accounting. On the other hand management accounting owes its origin to the management consciousness of mid-twentieth century. Thus management accounting is of a more recent origin on the other hand.
2. Object – The main object of cost accounting is to determine the cost of product or a service. However, in modern times, cost control and price fixation have also come to be recognized, as important objective of management accounting is to provide meaningful information to the management for decision-making and control.
3. Nature – Cost accounting includes both presents and future. Whereas management accounting is mainly future-oriented. It primarily concerns itself with the projection of figures for future.
4. Scope – The scope of cost accounting is limited to cost ascertainment and control. It deals with cost data only. The scope of management accounting is much wider than cost accounting. It includes financial accounting, cost accounting, and tax planning a decisional accounting.
5. Utility – Cost accounting is useful both for external parties and internal management. On the other hand management accounting is meant for the internal consumption or for internal use of the management.
6. Types of Data Used – Cost accounting deals with the monetary cost of products and services. It covers only quantitative aspects. On the other hand management accounting makes use of both quantitative and qualitative data, i.e. monetary as well as non-monetary figures.
7. Principles and Format – Cost accounting follows a definite format and principles. On the other hand management accounting follows to set format and principles for reporting. The format and procedure will differ from concern to concern. In fact, the method of presentation of information depends the informational needs of the individual concern and the skill of the management accountant.

Analysis and Classification of elements of cost

To understand the actual interpretation of the term 'COST' it is very important to understand the basic concept of elements of cost. There are three element of costing, which are as under –

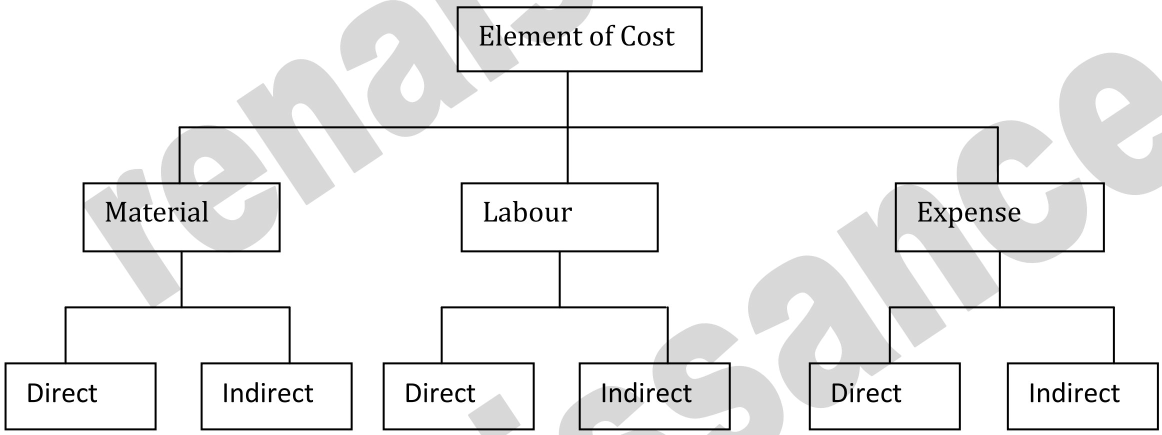
1. Material – The substance from which the product is made is called 'Material'. It may be in the form of raw or a manufactures state. It can be direct as well as indirect. It may be further sub-divided as under –
   a. Direct Material – In simple words, material which becomes an integral part of the finished product and which can be conveniently assigned to specific physical units is termed as 'Direct Material'. Its examples are as under.
      1. Components specifically purchases, produced or requisitioned from stores.
      2. Primary packing material such as carton, boxes and wrapping material etc.

   b. Indirect Material – Material which is used or applied for the purpose of ancillary to the business and which cannot conveniently be assigned to specific physical units, is termed as 'indirect Material' such as – Printing and Stationery material, oil and wastage, consumable stores etc.
2. Labour – To convert material into finished goods, human effort are required and such efforts of human beings are known as 'Labour'. It may be further sub divided as –
   a. Direct Labour – Any type of labour which is directly related to the production of a particular commodity is known as direct labour. It is thereof, specifically and conveniently traceable to specific products.

b. Indirect Labour – Indirect labour refers to the labour employed for the purposes of carrying out tasks incidental to goods produced or services provided is indirect labour. Such type of labour does not alter the construction composition or condition of the product. It cannot be practically traced to specific units o output. Such as wages of storekeepers, timekeepers, directors fees, salaries of salesman etc.

3. Expenses – It refers to the amount/expenditure/expenses directly or indirectly required for the production of a product. It may be of two types –
   a. Direct Expenses – It refers to the expenses directly conveniently and wholly allocated to specific cost centre sot cost unit. Such as Costly of defective work incurred in connection with a particular job or contract, hiring of special type machinery for the complete particular product.
   b. Indirect Expenses – It refers to the expenses, which cannot be directly, conveniently and wholly allocated to cost centres or cost units, such as

Elements of Cost with the help of a chart



ANALYSIS OF TOTAL COST

1. Prime Cost.- The aggregate of Direct material Cost, direct Labour Cost and Variable Direct expenses (or chargeable expenses) is the prime Cost.
2. Factory Cost.- Factory Cost is the total of Prime Cost + Factory Overheads,
3. Cost of Production.- The total Factory Cost and Office and Administration Overheads is the office Cost or Cost of Production.
4. Total Cost.= Cost of Production + Selling & Distribution Overheads.

CLASSIFICATION OF COST AND COST CONCEPT

The cost-classification is the process of grouping costs according to their characteristics.

1. **According to Elements**. The cost is classified into (i) Direct cost, and (ii) Indirect cost according to elements, viz., materials, Labour and Expenses.
2. **According to Functions**. The cost is classified into the following:
   i. Production Cost, or Manufacturing Cost, or Factory Cost,
   ii. Administration Cost,
   iii. Selling Cost, and
   iv. Distribution Cost.
3. **According to Nature**. The cost is classified into the following:
   i. Fixed Cost is “a cost which tends to be unaffected by variations in volume of output.
   ii. Variable Cost is “a cost which tends to vary directly with volume of output.
   iii. Semi-fixed or Semi-variable Cost is ‘a cost which is partly variable.’
4. **According to Controllability**.

i. Controllable cost. This is a cost which can be influenced by the action of a specified member of an undertaking.
ii. Uncontrollable Cost. It is the cost which cannot be influenced by the action of a specified member of an undertaking, such as fixed costs.

5. **According to Normality**. The cost is classified into (i) Normal cost, and (ii) Abnormal cost.

i. Normal cost. It is the cost at a given level of output in the condition at which that level of output is normally attained.
ii. Abnormal cost. It is a cost which is beyond normal cost.

6. **According to Relevance to Decision-making and Control**.

i. Shut-down Cost. A cost which will is required to be incurred even though a plant is closed or shut-down for a temporary period, e.g., the cost of rent, rates, depreciation, maintenance expenses etc.
ii. Sunk cost. A cost which has been incurred in the past or sunk in the past and is not relevant to the particular decision-making. E.g. written down book value of the plant.
iii. Opportunity Cost. The costs which are related to the sacrifice made or the benefits foregone are opportunity costs.
iv. Imputed Cost. It is a hypothetical cost required to be considered to make costs comparable. Interest on one's own capital.
v. Out-of-Pocket cost. A cost which will have to be paid to outsiders as against costs such as depreciation, which do not require any cash payment.
vi. Replacement Cost. It is the cost of replacing a material or assets, by purchase from the current market.
vii. Marginal Cost. Marginal cost refers to the increase or decrease in total cost caused due to increase or decrease in output by one single unit.
viii. Differential Cost. The change in total cost due to the change in method or technique of production or charged in level of production is called differential cost.
ix. Standard Cost. Standard cost is a predetermined cost or estimate which is compared with the actual cost in order to determine variance and carry out an analysis of variance for cost control.
x. Relevant Cost. The relevant costs are those cost which aids to makes specific management decisions.

7. **Product Cost & Period Cost**

The product cost is the total of cost that is associated with a unit of product. The cost in forming the product viz., direct material, direct labor, factory overhead constitute the product cost.

Period cost, on the other hand, are costs that tends to be unaffected by changes in level of activity during as given specific time period. E.g., Selling & distribution cost **SIGNIFICANCE OF COST ACCOUNTING**

i. It discloses the profitable and unprofitable activities in a concern and hence necessary adjustments are done.
ii. It enables the concern to measure its efficiency and then maintain or improve.
iii. It is helpful to the consumer by ensuring lower prices.
iv. It is useful to the government in the form of duties paid.
v. It discloses the relative efficiency of different workers in a concern.
vi. Through it the exact causes of decrease or an increase in profit or loss can be detected.
vii. It provided information upon which estimates and tenders are based.
viii. It guides future production policies.
ix. It helps in increasing profits by disclosing the sources of loss or waste and by suggesting such controls so that the same may not be repeated.
x. It enables a periodical determination of profits or losses without restoring to stock taking.

ADVANTAGES OF COST ACCOUNTING

To the Management

1. Action against unprofitable Activities 2. Facilities Decision Making 3. Inventory Control
4. Budgetary Control 5.Facilitations cost control 6. Prevents Fraud 7.Tool of Management Control
8. Measuring rods 9.Future Prospects

B. To the Employees
1. Sound Wage Policy
2. Security of Job
3. Distinction between Efficient and Inefficient Workers

C. To the Creditors

Bankers, creditors, investors etc., can have a better understanding of the firm as regard the process and prosperity, before they offer financial leading.

D. To the Government
1. For government wage tribunals, for deciding the state subsidy to industry.
2. In the preparation of national plans, economic development etc.
3. Cost audit is important and industries have to keep books of accounts to show the utilization of materials, labour and other costs.

E. To the Public
1. Removes all types of wastages and inefficiencies.
2. Facilities the customers to pay fair price.
3. Development and prosperity of industries will create employment opportunities.

CHARACERTISTICS OF A GOOD COSTING SYSTEM

1. Accuracy
2. Equity
3. Simplicity
4. Elasticity
5. Comparability
6. Promptness
7. Observation and Resulting
8. Periodical Result
9. Reconciliation with Financial Accounts

Specimen of Cost sheet – There is no fixed from of cost sheet, but in order to make it more useful, it is generally presented in a tabular form. Usually there are columns in the cost sheet – first column for the particular second for the total cost and third for the cost per unit for the current period. Cost sheet may also have to additional columns showing total cost and per unit cost for a preceding period.

A specimen of a cost sheet is given below –

M/S ______________ABC Co. Ltd.______________
Cost sheet /Cost Statement
For the period ending ______________________
(Output ______________Units)

Particulars	Detail Rs.	Total Rs.	Per Unit Rs.
Opening Stock of Raw Material	+		
Add: Purchases of Raw Material	+		
	?		
Less: Closing Stock of Raw Material	-		
	?		
Add: Direct Expenses/ Labour	+		
	?		
Prime Cost			
Add: Factory Overheads:			
Works Costs			
Add: Office and Administrative Overheads:			
Cost of Production			
Add: Office and Distribution Overheads:			
Cost of Sales			
	Profit		
Sales			

Items in the cost sheet

1. **Stock of raw materials –** Stocks of raw materials is used to calculate the cost of raw materials consumed. For computation of the raw material consumed, the value of opening stock of raw-materials added to and the value of closing stock of raw-materials is deducted from the value of materials purchased.
2. **Work-in-Progress –** Work-in-Progress means incomplete part of work or product. It is also known as semi-finished goods. Usually such goods bear proportionate share in factory overheads besides the cost of raw-materials consumed and direct wages. The treatment of stock of work-in-progress depends upon the basis of valuation of it. Thus it can be treated in any of the following ways –
   a. When it is valued at prime cost – The opening stock and closing stock of work in progress shall be adjusted in the cost sheet, while computing the prime cost.
   b. When it is valued at work cost – the opening stock and closing stock of work in progress are adjusted in the cost sheet, while computing the factory cost of goods manufactures during the accounting periods.
   c. When prime cost and factory overheads components are given separately – In this case prime cost components shall be adjusted while calculating prime cost and factory overhead components shall be adjusted while calculating factory cost.
   Usually the work-in-progress is valued ay works cost.
3. **Stock of Finished Goods –** In a cost sheet, the opening stock of finished goods is added to and closing stock of finished goods is deducted from the cost of production to find out the cost of goods sold.
4. **Treatment of the Cost of Rectifying the Defective Production –** Sometimes the production may not be, perfect as the saleable product but is capable of being rectified and brought to the

required degree of perfection provided some additional expenditure is incurred. The defective production may be unavoidable (normal) or abnormal. The additional cost incurred rectify the normal defective production is treated as abnormal loss and charged to costing profit and loss account.

5. **Sale of Scrap –** It is an incidental residue from certain types of materials used in the production, usually of small amount and low value, recoverable without further processing. The realizable value (i.e.) saleable value) of scrap may be deducted from the works cost.

UNIT – II

Material cost

Introduction to Material/Stock Control

The main object of cost accounting is cost control. This can be achieved by effective control over elements of cost. There are three elements of cost. Material cost, labour cost and expenses. Out these, material cost is the largest single item of expenditure and it has largest single item of expenditure and it has large portion of the total cost of an organization. It is true, in modern time that cost reduction is concerned with possible reduction in overheads. However, in majority of business overheads has only a fraction of direct material cost, so the importance of material control cannot be overlooked. If the material control is inadequate or if there is a lack of material control, it will result in loss due to wastage, theft, obsolescence, delay in production or locking up of working capital.

Concept of Material Control

Material cost constitutes a major part of the total cost of production. Therefore, proper accounting and control over materials purchase, consumptions and inventories are important for effective management of business. The basic aim of material control is the purchasing of materials, at reasonable price their proper storage and their efficient use of consumption.

Definition of Material Control

The term 'material control' means, "The regulation of the functions of an organization relating to the procurement, storage and usage of materials in such a way as to maintain an even flow production without excessive investment in material stock.

Objectives of Material Control

1. Maintenance of Even Flow of Production – The basic objective of material control is to develop a system which ensures availability of the required quantity of material at the proper time so that the flow of production may be maintained evenly.
2. Prevention of Excessive Investment in Material – In general, more than50% cost of a product belongs to material involved in it. Hence, there is huge investment of funds in material by manufacturing concerns. If the investment is not made systematically, the scarce resources would not be utilized in an optimum manner. Therefore, materials control is essential.
3. There should not be Shortage of Material – It is the basic objective of material control that the production should not suffer due to shortage of material. The material should be purchased in right quantity so that production may run smoothly. The delay or stoppage in production due to non-availability of material is very costly and results in loss of profits.
4. No Over-Stocking – Investment in material must be kept as low as possible, considering the production requirements and the financial resources of the business. Over stocking of material locks up capital and causes high storages thereby resulting in adverse effect on profits.
5. Economy in Purchasing – The purchasing of materials is highly specialized function. By purchasing materials at the most favourable price, the purchaser is able to make a valuable in cost.
6. Proper Quality – While purchasing materials, due consideration should be given to the quality. It is no use of purchasing materials of inferior quality or very superior quality. For each type of product, there is a particular type quality of materials which is needed and that quantity alone should be purchased.
7. Minimum Wastage – In order to minimize the loss of materials, proper storage conditions must be provided to different types of material. Losses of materials occur due to deterioration, obsolescence, pilferage and theft, evaporation, obsolescence, pilferage and theft, evaporation etc. All round efforts should be made to keep these losses at the minimum.

8. Information about Materials – Not only those materials should be available when required, but there should be also a system to give complete and up to date accounting information about the availability of material. Sometimes inadequate information about availability of materials amy cause new purchases to be made of material already in stock.

Essentials of Material Control

The objectives of materials control can be achieved by the effective material control. The following are the requisites for an effective material control.

1. There should be proper co-ordination and co-operation between various department e.g. purchasing department, Stores department, Accounting department, Inspection department etc.
2. There should be proper classification and codification of materials.
3. Material should be purchased only when it is required and properly authorized.
4. Material requirements should be properly planned.
5. The perpetual inventory system should be operated so that up to date information is available about the quantity of material in stock.
6. Adequate records should be introduced to control materials during production and the quantities manufactured for stock.
7. The storage of all materials should be well planned subject to adequate safeguards and supervision.
8. The various stock levels like minimum, maximum etc. should be fixed for each item of material.
9. Purchases of materials should be controlled through budgets.
10. An efficient system of internal audit and internal check should be operated so that all transactions involving materials are checked by reliable and independent persons.

Organization for Materials Control

Material control is achieved through an effective organization structure which defines authority and responsibility and provides a system of check. The size of the company, number of items purchased, weight and unit value of items and time required to manufacture a product will influence the organizational requirements in material control system. Following are the general requirements of organized system for material control.

1. Centralized purchasing under the direction and authority of a competent purchasing executive.
2. Use of standard printed forms reporting all steps in the acquisition and use of materials.
3. Communication between sales, production and purchasing departments regarding all changes which may influence materials requirements.
4. Establishing and operating a system of internal checks so that all transactions involving checks so that all transactions involving materials, suppliers and equipments purchased are checked and approves by a number of properly authorized persons. Proepr storage of all materisl and supplies.

Techniques of Inventory Control

1. **ABC Analysis Technique: -** It is a value based system of material control where materials are classified according to their value, A, B and C, so that costly and valuable materials are given greater attention and care.

   'A' items are high value items which consist of only a small percentage of total items handled and hence require tight control.

   'B' items are medium value materials which should be under normal control procedures

   'C' items are low value materials which represent a large number of items and require economical control procedures, and least attention.

2. **Determination of Stock Levels: -** To avoid under stocking and overstocking, maximum, minimum and reorder levels are fixed. Maximum Level: - It indicates the maximum quantity of inventory item which can be stored at any given time

Maximum Level = Minimum Stock + Economic Order quantity

Or

= Reorder Point + Reorder quantity –
[Minimum Consumption x Minimum reorder Period]

i. Minimum Level: - It indicates the minimum quantity of stock that should always be maintained so that there is no risk of stoppage of production.

Minimum Level = Reorder Point – [Average Consumption x Average re-order period]

iii. Re-order Level or Re-order Point: - This is that level of material at which purchase requisition is initiated for fresh supplies.

Re-order Level = Maximum consumption x Maximum Re-order period

iv. Danger Level: - It is that level at which normal issued are stopped and materials are issued for important jobs only.

Danger Level = Normal consumption x Maximum re-order period under emergency condition

v. Average stock Level:= $\frac{1}{2}\times$ [Minimum Level + Maximum Level]

Or

Minimum Level + ½ x [EOQ or re-order quantity]

3. **Economic Order Quantity**

EOQ [Economic or order quantity] or Re-order quantity: - EOCs is that size of the order which gives maximum economy in purchasing any material and ultimately contributes towards maintaining the material at optimum level and at minimum cost. While setting EOQ, two types of costs are considered

a. Ordering cost: - Cost of placing orders.
b. Carrying Cost: - Cost of holding stock in storage

EOQ = $\sqrt{\frac{2AO}{C}}$, where A= annual consumption in units, O = ordering cost per order,

C = storage or carrying cost as a percentage of inventory.

4. **VED Analysis Method**
5. **Perpetual Inventory system and system of store verification**: - Perpetual Inventory aims at devising the system of records by which the receipts and issues of material stores may be recorded immediately at the time of each transaction and the balance may be brought out so as to show the up-to-date position. This system is operated by: -
   a. Reconciliation of stock bin cards and stores ledger accounts
   b. Physical stock verification which is of two types: -
      i. Periodic stock verification & (b) continuous stock verification

Control Ratios

Inventory turnover Ratios: - This tells us how many times in a year is are used up and replaced. The greater the stock turnover, the more efficient is the stock policy. It indicates the rate of consumption, i.e. whether materials are moving fast or slowly. A high stock turnover ratio indicates fast moving materials and a low ratio indicates slow moving materials.

i. Stock Turnover Ratio = $\frac{\text{Cost of Materials consumed during the period}}{\text{Average stock of materials during the period}}$

$\frac{\text{Value of Finished Stock sold in the period}}{\text{Value of Average stock held during the period}}$

ii. Finished Stock Turnover Ratio =

iii. Inventory Turnover in terms of days = $\frac{\text{Days of the period}}{\text{Stock Turnover Rate}}$

Or

$\frac{\text{Value of Average x Days of the period}}{\text{Material consumed}}$

iv. Input – Output Ratio: - This is the ratio of raw material put into manufacture and standard raw material content of the actual output. The formula is

$$\frac{\text{Input Units}}{\text{Output units}} \times 100$$

Treatment of material Wastage/ Losses

1. Material Losses may be normal as well as Abnormal.

   Normal Loss: - Which has to be incurred and is unavoidable e.g., evaporation in case of liquid materials, loss due to loading and unloading of materials, etc.

   Abnormal Loss: - which arises due to inefficiency in operations or mischief, e.g., theft, pilferage, breakage, fire etc.

   Accounting Treatment: - In order to absorb normal material losses in cost, the rates of usable materials in stock are inflated so that such losses are covered. Normal material loss is transferred to factory overhead.

   Abnormal material losses are charged to Costing profit and loss account.

2. **Waste: -** It is that part of basic raw material which is lost in processing and has no recovery value
   Accounting: - If it is normal, the cost will be absorbed by the good production and if it is abnormal, then it is transferred to Costing profit and loss account.

Pricing of Materials Issued

1. Cost Price Methods: -
   i. First-in-First-Out Methods – FIFO
   ii. Last in first Out Method – LIFO
   iii. Highest in First Out Method – HIFO
   iv. Base stock Method
   v. Specific Price Method.
2. Average rate Method: -
   i. Simple Average Method
   ii. Weighted Average Method
3. Market Price Method: -
   i. Replacement Price Method.
   ii. Realizable Price Method.
4. National Price Method: -
   i. Standard Price Method.
   ii. Inflated Price Method.