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Advanced Accountancy Paper-VI
(Cost Accounting)

For

M. Com. Part-I

Semester - II

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Preface

It gives us immense pleasure to bring forward this self learning material (SLM) for Advanced Accountancy Paper VI (Cost Accounting) for the students of M. Com. I. As per the order and guidelines of the Government of Maharashtra, National Education Policy 2020 is implemented for all the post graduate programmes of Shivaji University from the Academic Year 2023-24. According to the Guidelines of the Government of Maharashtra regarding implementation of NEP 2020 for post graduate programmes, structure of the M. Com. programme and syllabus of the paper is set and introduced from June 2023.

The subject Cost Accounting occupies an important place in the content of Commerce and Management Education. Its importance has been arduously recognised not only by the industries producing commodities and services in private and public sector but also by government and local bodies. In order to keep the students well conversant with the ever enlarging frontier of cost accounting knowledge and to fulfil the needs of the industry, the Board of Studies in Accountancy redrafted the syllabus of the subject. This book brings out theoretical and practical knowledge of some of the areas in Cost Accounting.

The main feature of this SLM is that, it provides sufficient theoretical knowledge of each unit included in this paper and also provides sufficient number of illustrations of practical problems. Problems are illustrated considering the nature of question paper and arranged in logical sequence. Solutions to the problems are given in details, explaining all the aspects of the problems to facilitate the understanding and grasping by the students. First unit gives introduction to cost accounting and explains elements of cost in detail along with solutions of different types of problems. The second unit clarifies the concepts of job costing and unit costing with illustrations presented neatly. The third unit describes process costing with several illustrations and the fourth unit describes the need of contract costing. It also shows how to prepare contract account and ascertain cost and profit from each contract.

We are thankful to all the authors who have contributed to this SLM. We appreciate the efforts taken by the authors to enrich the quality of the concerned units. We express our deep sense of gratitude to Hon. Vice Chancellor Prof. (Dr.) D. T. Shirke, Hon. Pro-Vice Chancellor Prof. (Dr.) P. S. Patil, Hon. Dean of the Faculty of Commerce and Management Prof. (Dr.) S. S. Mahajan and Registrar Dr. V. N. Shinde for their supreme support and guidance. We thank specially to Prof. (Dr.) D. K. More for his keen interest in developing quality study material, untiring support, cooperation and assistance to produce the study material. We are also thankful to the concerned staff of CDOE who worked continuously for preparation and publication of this study material.

We will welcome suggestions from students for the further improvement of the book.

■ Editors ■

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M. Com. Part-I

SIM IN ADVANCED ACCOUNTANCY (COST ACCOUNTING) PAPER VI

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Each Unit begins with the section objectives -

Objectives are directive and indicative of :

1. what has been presented in the unit and
2. what is expected from you
3. what you are expected to know pertaining to the specific unit, once you have completed working on the unit.

The self check exercises with possible answers will help you understand the unit in the right perspective. Go through the possible answers only after you write your answers. These exercises are not to be submitted to us for evaluation. They have been provided to you as study tools to keep you in the right track as you study the unit.

Dear Students

The SIM is simply a supporting material for the study of this paper. It is also advised to see the new syllabus 2023-24 and study the reference books & other related material for the detailed study of the paper.

Unit-1

Introduction and Elements of Cost

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- 1.6 Exercise
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1.0 Objectives:

After studying this unit students should be able to —'

- Understand the concept of Cost Accounting.
- Explain the scope of Cost Accounting.
- Know the objectives of Cost Accounting.
- Understand the Elements of Cost, Cost Unit, Cost Centre, Cost Sheet and Quotation.
- Prepare the Cost Sheet and Quotation.

1.1 Introduction:

Cost accounting is a branch of accounting which is developed to overcome the limitations of financial accounting. Financial accounting is the oldest branch of accounting which is concerned with record keeping and preparation of financial statements. In financial accounting, the Profit and Loss Account and Balance Sheet are prepared but these statements give limited information. Management requires so much information to execute its functions effectively and this information is provided by the cost accounting. The development of cost accounting is so quick and fields covered by it are also expanding.

1.2 Presentation of Subject Matter

1.2.1 Meaning of Cost Accounting:

The term cost indicates the amount of expenditure incurred on or attributable to a specified thing or activity or cost unit. Cost accounting is related to the accounting of cost. There are different terms used in the field of accounting of costs. These terms are like Costing, Cost Accounting and Cost Accountancy. The meaning of these terms is different.

Costing is a technique and process of ascertaining costs. This technique consists of principles and rules which govern the procedure of ascertaining the cost of product/service.

Cost accounting is the accounting system used in costing. That means it is the procedure of classifying, recording and appropriate allocation of expenditure for the

determination of the cost of product or service for the presentation of suitably arranged data for purposes of control and guidance of management.

Cost accountancy is the application of costing and cost accounting principles, methods and techniques to the science, art and practice of cost control and the ascertainment of profitability.

To understand the meaning and nature of the term cost accounting, it is necessary to go through the various definitions of cost accounting given by different authors which are as follows —

- 1) "Cost accounting is the branch of accounting dealing with classification, recording, allocation, summarization and reporting of current and prospective costs" — Kohler.
- 2) "It is the process of ascertaining cost from the point at which expenditure is incurred or committed to the establishment of its ultimate relationship with cost centre and cost units. In its widest usage, it embraces the preparation of statistical data, the application of cost control methods and the ascertaining of the profitability of activities carried out or planned." — Institute of Cost and Management Accountants (ICMA), England and Wales.
- 3) "Cost accounting is a set of procedures for determining the cost of product and various activities involved in its manufacture and sales and for planning and measuring performance."- C.G Gillespie.
- 4) "Cost accounting is the application of accounting and costing principles, methods and techniques in the ascertainment of costs and the analysis of saving or excess cost incurred as compared with previous experience or with standards"- Wheldon.

The above definitions explain that cost accounting is related to the cost of a product or service. It is the mechanism by means of which cost of product or services are ascertained and controlled. It is the process of classifying, recording and appropriate allocation of expenditure for the determination of the total cost of product or service and for the presentation of suitably arranged data to the management with the purpose of control and guidance. It deals with the cost of production, administration, selling and distribution. From the above definition and explanation we can mention the features of cost accounting as under –

- i) It is a process of accounting for costs.
- ii) It is related with cost ascertainment, cost control and cost reduction.
- iii) It records total cost of product or service.
- iv) It classifies the total cost as per elements of cost.
- v) It establishes standards so that actual costs may be compared to find out deviations.
- vi) It provides suitably arranged data for purpose of control and guidance of management.

The nature of cost accounting is multi-dimensional. It is the science, art and practice of a cost accountant. It is a science because it is a body of systematic knowledge having certain principles which a cost accountant should process for proper discharge of his responsibilities. It is an art as it requires the ability and skill with which cost accounting principles are applied to solve various managerial problems. Practice includes continuous efforts in cost accounting to present information for the purpose of managerial decision making and keeping statistical information.

1.2.2 Scope of Cost Accounting:

The term scope denotes the areas covered by that particular activity. The scope of cost accounting also indicates the areas or field included in cost accounting. Cost accounting comes into existence for the help of management. The management of every business firm has to carry different function like planning, organizing, controlling, decision making etc. These functions of management cannot be satisfactorily carried out with the help of financial accounting only. At the beginning the scope of cost accounting was limited to ascertain the cost but as the time changes the scope of it becomes wider. The scope of cost accounting can be explained as under —

- 1) **Collection and classification of costs:** In cost accounting costs are collected and classified by different ways in order to provide information to management for planning and control purpose and to ascertain the profitability of each activity. It enables a concern to measure the efficiency and then to maintain and improve it.

- 2) **Control of costs:** Cost accounting, by using different techniques able to control materials, labour and overheads costs. The stores ledger, levels of stocks help to control the materials, different wage plans, record of labour work help to control labour costs and classification of overheads help to control overhead costs.
- 3) **Business Policies:** Business policies require the consideration of alternatives and this is facilitated by cost accounting. Cost accounting provides the information regarding make or buy, introduce new product, capacity utilization, problem of limiting factor, replacement of an asset etc. with the help of marginal costing technique and differential cost analysis. So management can decide the proper business policies.
- 4) **Budgeting:** Cost accounting provides the use of budgets and performance reports for the purpose of attaining objectives of management. With the help of budgets management can plan well and with the help of performance reports effective control can be possible.
- 5) **Cost Audit:** The operation of a system of cost audit in the organization will assist in prevention of errors and frauds. It will help to improve cost accounting methods and techniques to facilitate prompt and reliable information to management.
- 6) **Special Factors:** Cost accounting informs management about the special factors like optimum profitability, seasonal variation in volume and costs, idle time of labour, idle capacity of the machine etc. It also helps to reduce the losses during the off season.
- 7) **Price Determination:** The fixation of price cannot be properly done without proper figures of costs are available. Cost accounting helps management to fix the remunerative selling prices of various items of goods in different circumstances.

1.2.3 Objectives of Cost Accounting:

Cost accounting has certain objectives which are as follows —

- i) **Cost Ascertainment:** The main objective of cost accounting is to ascertain the cost of product, services or jobs. Total cost as well as per unit cost is ascertained by using any suitable costing methods or costing technique.

ii) Cost Analysis: Now a day, cost analysis has got more importance because mere cost ascertainment is not sufficient. Therefore to provide a correct analysis of costs both by process or operations and by different elements is become the important objective of cost accounting.

iii) Determination of Selling Price: Determination the proper selling price of a product or service is one of the very important decisions of the management. Cost accounting provides the base for determine the selling price by disclosing detailed and relevant cost figures.

iv) Ascertainment of Profitability: Ascertainment of profitability of each product or service is one of the objectives of cost accounting. Cost accounting, by comparing the cost data with selling price, helps to ascertain the profit of each product or service. It also advises to management as to how these profits can be maximized.

v) Cost Control: Cost accounting helps in controlling the costs of product. The objective of cost accounting is to develop a system of cost control for materials, labour and overheads, as well as control of stock; therefore the cost minimized the capital locked up.

vi) Cost Reduction: In the today's competitive age cost reduction is become the main objectives of cost accounting. Due to proper analysis of cost, management can disclose ways of wastage of materials, labour and overheads and by taking proper decisions or actions these wastages can be avoided and cost can be reduced.

vii) Preparation of Reports: In business it is necessary to prepare financial statements, reports by frequent intervals. Cost accounting provides data regarding various costs, stock levels, stock values etc. which help to prepare financial statements and reports.

viii) Providing Base for Decisions: The one of the important objectives of cost accounting is to provide base for management decisions. Cost accounting supply useful data to management for taking various decisions such as introduce a new product, replacement of labour or machine, make or buy, shut down or continue a particular activity etc.

1.2.4 Advantages of Cost Accounting:

There are many advantages of cost accounting. Some of the important advantages are given below:

1. The cost accounting system is useful to ascertain the cost of any product or service.
2. It is helpful to reduce the cost and increase the profit.
3. With the help of cost accounting the business firm can determine the selling price of the product or service.
4. The cost accounting system provides data about profitable and unprofitable products and activities on the basis of it management can take suitable corrective measures which may lead to higher profit.
5. All items of costs can be analyzed to minimize the losses and wastage emerging from the manufacturing process and reduce the costs associated with different activities.
6. Cost accounting helps in improving production methods so that costs can be controlled and profit increased.
7. Cost data can be obtained and compared with standard cost within the firm or industry.
8. Cost accounting helps management in avoiding losses arising due to many factors, such as low demand, competitive conditions, change in technology, seasonal demand for the product etc.
9. Negotiations with government and labour unions can easily be made with the information provided by the cost accounting system.
10. Cost accounting helps management in knowing the costs of different alternatives and selecting the most advantageous course of action. Decisions like make or buy, continue or drop a product, buy or lease, sell or process further, operate or shut down and other short-term decisions are easily taken with the help of cost accounting data.
11. More accurate and reliable financial accounts can be prepared promptly for use of management.

12. An adequate cost accounting system ensures maximum utilization of physical and human resources, checks fraud and manipulations and helps employees as well as the employers in their basic goals getting higher earnings and maximizing the profit of the concern.

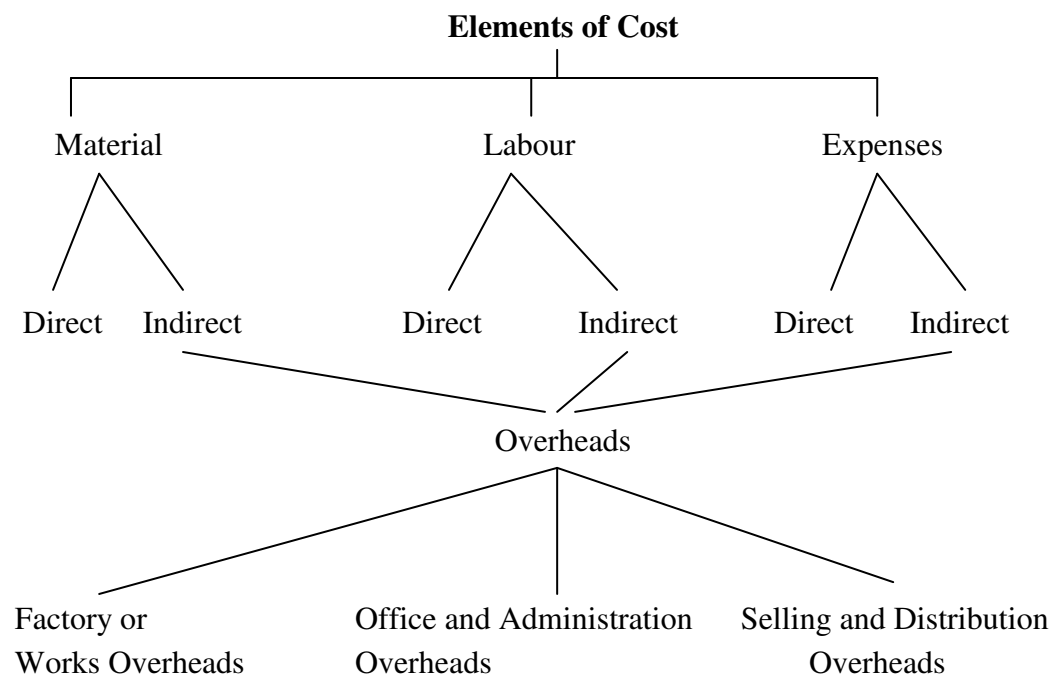
1.2.5 Elements of Cost:

The term cost indicates the amount of expenditure incurred on or attributable to a specified thing or activity or cost unit. The expenditure may be actual or notional. It is the general meaning of cost. But the term cost cannot be exactly defined. Its interpretation depends upon the nature of the business or industry and the context in which it is used. The cost is mainly expressed from the manufacturer's or producer's point of view and not in the viewpoint of consumer or end user. The monetary value of all sacrifices made to achieve an objective i.e. to produce goods and services is termed as cost. Cost refers to the expenditure incurred in producing a product or in rendering a service. Cost ascertainment is based on uniform principles and techniques. Hence cost is objectively determined.

As cost indicates the total amount of expenditure incurred on or attributable to a specified thing or activity from production to make that thing available to customer, it has different components. These components are called as elements of cost. All these expenses can be basically classified in to three categories or there are basically three elements of cost. These basic elements are as follows:

1. Materials
2. Labour
3. Expenses

These elements are further classified in to different sub-elements. The following chart shows the classification of elements of cost.



Material:

The element from which the product is made is known as material. This material may be in a raw form or finished/manufactured form. According to the Chartered Institute of Management Accountants (CIMA), London, “Material cost is the cost of commodities supplied to an undertaking.” It may be direct or indirect. Therefore there are two categories of material namely Direct Material and Indirect Material.

Direct Material:

Direct material is that material which can be identified in the product and can be conveniently measured and directly charged to the product. It is an integral part of the finished product, e.g. timber in furniture, cloth in dress making, leather used in shoe making, bricks and cement used in construction of building are called direct material. Direct material is also called as production material, process material, prime cost material, stores material, constructional material etc.

The direct material normally include,

- i) All raw materials like jute in the manufacture of gunny bags, pig iron in foundry and fruits in canning industry.

- ii) Parts or components purchased or produced such as spare parts of mechanical goods such as scooters, car, radio, fan, machines etc.
- iii) Primary packing materials like wooden or card board boxes, cartons wrapping etc.
- iv) Buying expenses on raw materials / spare parts/ packing materials such as carriage and freight, import duty, custom duty, octroi etc.

Indirect Material:

The material which cannot be conveniently assigned to a specific product is termed as indirect material. Though such material forms the part of a product it is of very small value it may be treated as indirect material e.g. thread or buttons used in dress making, nails, paint, polish paper etc. used in furniture making; threads, nails, polish etc. used in shoe making etc. Because such materials are of small value and they are incurred on all items jointly and efforts involved in identifying those with a particular product will not commensurate with the advantage gained by doing so. Indirect material may be used in the factory or in the office or in the selling and distribution division.

Labour/Wages:

Human efforts needed for the working in a factory, office and selling department are called as labour/wages. According to CIMA London, "Labour cost means the cost of remuneration (i.e. Wages, Salaries, Commission, Bonus etc.) of the employees of an undertaking." It includes all fringe benefits like provident fund contribution, gratuity, overtime, incentive, idle time, holiday wages etc. Labour/wages is also divided as direct as well as indirect.

Direct Labour/Wages:

The labour costs which can be conveniently identified in the particular product and which can be easily measured and charged to the product are called direct labour or wages. It is also defined as "all labour expended in altering the construction, composition, conformation of condition of the product." In simple words, direct labour refers to the wages of workers who are directly engaged in the production of product. e.g. wages of a worker who stitches a shirt, wages of carpenters in furniture making and wages of cobbler in shoe making are treated as direct wages. Payments of the following groups of labour are treated as direct labour. Direct labour is also

called as process labour, productive labour, operating labour etc. Direct Labour includes

- 1) Labour engaged in the actual production or in the carrying out of an operation or process.
- 2) Inspectors, analysis etc. specially required for such production.
- 3) Labour assisting the production process by supervision, maintenance, materials handling, tool setting etc. if specially identified.

Indirect Labour/Wages:

Labour used in the work which is incidental or supportive to goods produced or services provided is indirect labour. The wages paid to labour who assists the direct labour in production process is treated as indirect labour, if it cannot be conveniently charged to a particular product e.g. wages of a supervisor in furniture workshop at Rs. 500 p.m. can be conveniently charged to the products, if suppose 50 chairs of same type are manufactured under his supervision (i.e. $500 / 50 = 10$ per chair) but if ten sofa-sets, five dining sets, five tables and four cupboards are manufactured under the supervision of the same supervisor it will not be convenient to charge his wages to these different products. Hence it becomes indirect labour.

Expenses:

All amount incurred to produce goods or services and make them available to customers except material and labour is called as expenses. According to CIMA, London, “Expenses means the cost of services provided to an undertaking and the notional cost of the use of owned assets.” Expenses also divided as direct and indirect.

Direct expenses:

It includes all expenditure other than direct material or direct labour that is specifically incurred for a particular product or process. Such expense is charged directly, conveniently and wholly to the particular cost unit or cost centre concerned as part of the prime cost. Examples of direct expenses are-i) Excise duty ii) Royalty iii) Architects fees in construction work iv) Cost of rectifying defective work v) Expenses of designing for the product vi) Experimental expenses in developing the product vii) Hire charges of special equipments obtained for a particular job or

contract. Direct expenses are also termed as chargeable expenses, productive expenses etc.

Indirect Expenses:

These are the expenses which cannot be directly, conveniently and wholly allocated to particular cost unit or cost centre. Examples of such expenses are rent, lighting, insurance etc.

Overheads/On - cost:

The total indirect cost is termed as overheads. That means indirect material, indirect labour and indirect expenses constitutes overheads. According to CIMA, London, "Overheads is the total cost of indirect materials, indirect labour and indirect expenses." Overheads are the cost of materials, labour and expenses which cannot be economically identified with particular cost unit.

Classification of Overheads:

Overheads are broadly classified on the basis of functions. A manufacturing concern generally has three divisions' viz. factory or works, office, and selling and distribution division. Therefore overheads are classified into three categories as Factory or Works Overheads, Office and Administration Overheads, and Selling and Distribution Overheads.

Factory/Works Overheads:

The overheads which are concerned with production/manufacturing activity or concerned with work carried out in a factory are termed as factory overheads. These overheads are also termed as works overheads, production overheads, manufacturing overheads. It includes indirect materials used in the factory such as consumable stores, lubricants, cotton waste, oil, etc.; indirect labour such as gate keeper salary, time keeper salary, foreman salary, works manager salary etc.; and indirect expenses such as factory rent, factory insurance, factory lighting etc.

Office and Administration Overheads:

The overheads which are incurred to carry on office and administration work are termed as Office and Administration Overheads. These overheads are not directly connected with production or sales. It includes indirect materials used in office such as printing and stationary material, brooms, dusters etc.; indirect labour such as

salary of office manager, salary of accountant and clerks, etc. and indirect expenses such as rent, insurance, lighting, telephone bill of office etc.

Selling and Distribution Overheads:

The overheads which are concerned with selling and distribution activities are termed as selling and distribution overheads. It includes indirect materials used in sales and distribution department such as packing material, printing and stationary material etc.; indirect labour such as salaries of salesmen and sales manager, salary of delivery van driver, wages of workers in packing department etc. and indirect expenses such as delivery van expenses, insurance, advertising etc.

1.2.6 Classification of cost:

It is the process of grouping costs according to their characteristics. Costs are classified or grouped according to their common characteristics. A suitable classification of costs is of vital important in order to identify the cost with cost centres or cost units. Cost can be classified into the following groups.

- (i) According to elements.
- (ii) According to functions or operations.
- (iii) According to nature or behaviour.
- (iv) According to controllability.
- (v) According to normality.
- (vi) According to association with product.
- (vii) According to Management Decision Making.
- (viii) According to the basis of manufacturing process.
- (ix) According to time.

i) By nature or element :

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. 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.

ii) By functions or operations :

(a) Production cost : It begins with the supplying of materials, labour and services and ends with the primary packing of the product. Thus, it includes the cost of direct material, direct labour, direct expenses and factory overheads.

(b) Administration cost : It includes all expenses incurred in relation to management or administration of business i.e. all office expenses means, printing and stationery, office salaries, postage and telegram, office rent, rates and insurance, legal charges, depreciation, audit fee, repairs of office building etc.

(c) Selling and Distribution cost : Expenses incurred in respect of getting orders for the commodity e.g. advertisement and publicity, salaries and commission of salesmen, sales office expenses, bad debts, sales promotion expenses, after sales service, market research expenses, show-room expenses etc.

Distribution overheads-are the expenses incurred in dispatching and delivering the finished goods to customers, such as warehouse rent, transportation on sales, loading and unloading charges, salaries of dispatch clerk and workers, special packing charges, delivery van expenses, carriage outward etc.

(d) Research cost : The cost of searching- new or improved products, new application of materials, new or improved methods are called research costs.

(e) Development costs : These are costs of the process which begins with the implementation of the decision to produce a new or improved product or to employ a new or improved method and ends with the commencement of formal production of the product or employment of the method.

(f) Pre- Production costs : These are those costs which are incurred on making a trial production run prior to formal production.

iii) Classification according to nature or behaviour :

Some costs increase or decrease in direct proportion to the volume of production, some costs remain unaffected, while others change but not in direct proportion to the change in volume of production.

These are :

- i) Variable costs.

ii) Fixed costs and

iii) Semi variable or semi-fixed cost.

i) Variable costs : These are costs which tend to vary or change in relation to volume of production. They increase in total as production increases and vice-versa e.g. cost of raw materials, direct wages etc. However, variable costs per unit are generally constant for every unit of the additional output.

ii) Fixed costs : These are costs which remain constant at various levels of production. They are not affected by volume of production e.g. factory rent, insurance etc. Fixed costs per unit vary inversely with volume of production i.e. if production increases, fixed cost per unit decreases and vice-versa, sometimes, these are also known as Capacity costs or Period costs e.g. rent and rates of building, salary of Works manager, Depreciation of building, insurance, interest on capital, municipal taxes.

iii) Semi Variable costs : These are costs which are partly fixed and partly variable. These are fixed up to a particular volume of production and become variable thereafter for the next level of production. Hence they are also called Step Costs. Some examples are Repairs and maintenance, Electricity, Telephone etc.

iv) According to controllability : According to this feature costs may be classified into controllable and uncontrollable heads.

(a) Controllable costs : Costs which can be influenced by the action of a specified executive of an undertaking are known as controllable costs. A business organization is usually divided into a number of responsibility centres and each such centre is headed by an executive. Controllable costs incurred in a particular responsibility centre can be influenced by the action of the executive heading that responsibility center.

(b) Uncontrollable costs : Cost which cannot be influenced by the action of a specified member of an undertaking are known as uncontrollable costs. For example, expenditure incurred by, say, the tool room is controllable by the foreman in charge of that section but the share of the tool-room expenditure which is apportioned to a machine shop is not to be controlled by the machine shop foreman.

v) According to normality : 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.
- vi) **According to association:** According to this feature costs may be classified into product cost and period cost.
 - (a) **Product cost:** Product cost of those costs which are associated with and directly identifiable with the product. In other words, costs which are assigned to the product are product costs. A product costs is thus the sum of the costs assigned to a product for a specific purpose.
 - (b) **Period costs:** Period costs are costs that are reported as expenses of the period in question. These are costs which are not assigned to the product but are charged against revenue costs of the period in which they are incurred. All non manufacturing costs such as general and administrative expenses, selling and distribution expenses are example of period costs.
- (vii) **According to Management Decision Making:**

Costs are classified for the purpose of management decision making under different circumstances as under:

a) **Marginal cost:** It is the aggregate of variable costs, i.e. prime cost plus variable overhead. Marginal cost per unit is the change in the amount at any given volume of output by which the aggregate cost changes if the volume of output is increased or decreased by one unit. Marginal cost is used in Marginal Costing system. For determining marginal cost, semi-variable costs, if any, are segregated into fixed and variable cost. Then, variable costs plus the variable part of semi-variable costs is the total marginal cost for the volume of production in consideration.

b) **Differential Cost:** It is the change in cost due to change in activity from one level to another. Differential Cost is found by using the principle which highlights the points of differences in costs by adoption of different alternatives. This technique is used in export pricing, new products and pricing goods sought to be promoted in

new markets, either within the country or outside. The algebraic difference between the relevant cost at two levels of activities is the differential cost. When the level of activity is increased, the differential cost is known as incremental cost and when the level of activity is decreased, the decrease in cost is known as decremental cost.

c) Opportunity Cost: It is the value of the alternatives foregone by adopting a particular strategy or employing resources in specific manner. It is the return expected from an investment other than the present one. The opportunity cost is considered for selection of a project or justification of investment, studying viability of an investment option.

d) Replacement Cost: It is the cost of an asset in the current market for the purpose of replacement. Replacement cost is generally used for determining the optimum time of replacement of an equipment or machine in consideration of maintenance cost of the existing one and its productive capacity.

e) Relevant Costs: These are costs relevant for a specific purpose or situation. In the context of decision making relating to a specific issue, only those costs which are relevant are considered. A particular cost item may be relevant in a decision making and may be irrelevant in some other decision making situation. For example, present depreciated cost of machine is relevant in case of decision of its sale but it is irrelevant in case of decision of its replacement.

f) Imputed Costs: These are hypothetical or notional costs, not involving cash outlay, computed only for the purpose of decision making. In economics, 'imputed' indicates an ascribed or estimated value when there is no criteria of absolute monetary value for such purpose. Imputed costs are similar to opportunity costs. Interest on internally generated fund, which is not actually paid is an example of imputed cost.

g) Sunk Costs: These are historical costs which are incurred i.e. 'sunk' in the past and are not relevant to the particular decision making problem being considered. Sunk costs are those that have been incurred for a project and which will not be recovered if the project is terminated. While considering the replacement of a plant, the depreciated book value of the old asset is irrelevant as the amount is a sunk cost which is to be written off at the time of replacement.

(viii) According to the basis of manufacturing process:

Costs are also classified on the basis of nature of production or manufacturing process as follows:

a) Batch Cost: Batch cost is the aggregate cost related to a cost unit which consists of a group of similar articles which maintain its identity throughout one or more stages of production.

b) Process cost: When the production process is such that goods are produced from a sequence of continuous or repetitive operations or processes, the cost incurred during a period is considered as process cost. The process cost per unit is derived by dividing the process cost by number of units produced in the process during the period.

c) Operation Cost: It is the cost a specific operation involved in a production process or business activity. When there are distinctly separate operations involved in a process, cost for each operation is found out for effective control mechanism.

d) Operating Cost: It is the cost incurred in conducting a business activity. Operating costs refer to the cost of undertakings which do not manufacture any product but which provide services.

e) Contract cost: It is the cost of a contract with some terms and condition of adjustment agreed upon between the contractee and the contractor. Contract cost usually implied to major long term contracts as distinct from short term job costs. Escalation clause are sometimes provided in the contract in order to take care of anticipated change in material price, labour cost etc.

f) Joint Costs: These are the common cost of facilities or services employed in the output of two or more simultaneously produced or otherwise closely related operations, commodities or services. When a production process is such that from a set of same input, two or more distinguishably different products are produced together, products of greater importance are termed as joint products and products of minor importance are termed as by-products and the costs incurred prior to the point of separation of the products are termed as Joint Costs.

g) By-Product Cost: It is the cost assigned to the by-product.

h) Avoidable Costs: Avoidable Costs are that costs which under given conditions of performance efficiency should not have been incurred. Avoidable

costs are logically associated with some activity or situation and are ascertained by the difference of actual cost with the happening of the situation and the normal cost. When spoilage occurs in manufacture in excess of normal limit, the resulting cost of spoilage is avoidable cost. Cost variances which are controllable may be termed as avoidable cost.

i) Unavoidable Costs: These are inescapable costs which are essentially to be incurred, within the limits or norms provided for. It is the cost that must be incurred under a programme of business restriction. It is fixed in nature and inescapable.

(ix) According to time:

A cost item is related to a specific period of time and cost can be classified according to the system of assessment and specific purpose as indicated in the following ways:

a) Historical Costs: Historical costs are the actual costs of acquiring assets or producing goods or services. They are 'postmortem' costs ascertained after they have been incurred and they represent the cost of actual operational performance. Historical costing system follows a system of accounting to which all values are based on costs actually incurred or as relevant from time to time.

b) Pre-determined Costs: These costs for a product are computed in advance of production, on the basis of a specification of all the factors affecting cost and cost data. Pre-determined costs may be either standard or estimated.

c) Standard Costs: These are predetermined costs. A predetermined norm applied as a scale of reference for assessing actual cost, whether these are more or less. The standard cost serves as a basis of cost control and as a measure of productive efficiency when ultimately posed with an actual cost. It provides management with a medium by which the effectiveness of current results is measured and responsibility of deviation placed. Standard costs are used to compare the actual costs with the standard cost with a view to determine the variances, if any, and analyse the causes of variances and take proper measure to control them.

d) Estimated Costs: These costs of a product are prepared in advance prior to the performance of operations or even before the acceptance of sale orders. Estimated cost is found with specific reference to product in question, and activity

level of the plant. It has no link with actual and hence it is assumed to be less accurate than the standard cost.

Group Discussion:

Group Discussion is an effective tool in problem solving, decision making and personality assessment. It improves your thinking, listening and speaking skills. It also promotes your confidence level. Group Discussion skills may ensure academic success, popularity and good admission or job offer.

Group Discussion is conducted under the supervision of a supervisor or testing officer or a board of testing officers. Generally two topics are given to the groups allowing them five minutes to discuss among themselves and come to conclusion out of the two. Any one from the group can communicate the decision of the group to the testing officer. In professional group discussion every topic or subject given for discussion has two sides, one is positive or acceptable and another is negative or non-acceptable. A candidate has to express his view on any one side. A group generally may be of 10 students/candidates. All the candidates in the group are given token numbers. The testing officer will closely observe your role during the discussion.

Rules/Guidelines for Group Discussion:

While group discussion everyone should take note of guidelines. Very brief discussion guidelines could include items like:

- Allow everyone a chance to speak.
- Listen respectfully and actively.
- Criticize ideas, not individuals.
- Commit to learning, not debating.
- Avoid blame, speculation, inflammatory language.
- Avoid assumptions about others, especially based on their perceived social group.

Mistakes you must avoid in a Group Discussion:

While group discussion everyone should must try to avoid the common mistakes which are enlisted below:

- Don't take the lead, if you don't know the topic.

- Don't hesitate to take the lead, if you know it.
- Don't copy or follow someone else's ideas or comments.
- Don't contradict your own points.
- Don't avoid eye contact with fellow participants.
- Avoid interrupting others.

You must remember that your comments should be logical, justifiable, impressive, convincing and knowledgeable. If these aspects are covered, there will be clear chance of your success in the group discussion.

Example: In this unit example of group discussion is given for study purpose and it is based on the unit content. A teacher is a observer and 8 students are included in a group.

Topic for discussion: Is cost accounting beneficial to all stakeholders of a business firm?

In favour of Point	Against the Point
Friends or (Ladies and Gentlemen), to my mind cost accounting is beneficial to all stakeholders of a business firm.	Friends or (Ladies and Gentlemen), to my mind cost accounting is not beneficial to all stakeholders of a business firm.
1. The users/stakeholders of accounting information are internal and external. All these users/stakeholders are beneficial from cost accounting.	1. The users/stakeholders of accounting information are internal and external. All these users/stakeholders are not beneficial from cost accounting.
2. The internal users/stakeholders of accounting information include members of management at different levels and external users/stakeholders of accounting information include shareholders, creditors, financial analysts, government authorities, stock exchanges, labour unions etc. All these users/stakeholders are beneficial from cost accounting, to	2. The internal users/stakeholders of accounting information include members of management at different levels and external users/stakeholders of accounting information include shareholders, creditors, financial analysts, government authorities, stock exchanges, labour unions etc. Out of these only internal users/stakeholders are beneficial from

some or more extent.	cost accounting.
3. The important benefits of cost accounting are ascertainment of cost, cost control, reduction of cost which leads to maximize the profit ultimately beneficial to all users/stakeholders.	3. The important benefits of cost accounting are ascertainment of cost, cost control, reduction of cost which is useful to take various management decisions. Therefore only internal users/stakeholders are beneficial from cost accounting.
4. Cost accounting helps to prepare more accurate and reliable financial accounts which are helpful to all users/stakeholders.	4. Cost accounting helps to take different management decisions like make or buy, continue or drop a product, buy or lease, sell or process further, operate or shut down etc. which are helpful to only internal users/stakeholders.

Note- This is one of the examples of group discussion. Students should conduct such type of group discussions on various topics related to this unit.

1.2.7 Cost Unit and Cost Centre:

Costing technique includes collection and classification of expenditure according to elements of cost and allocation and apportionment of the expenditure to the cost unit or cost centre or both. The elements of cost have been already explained and the terms cost unit and cost centre are explained below.

Cost Unit:

In cost accounting it becomes necessary to select a proper unit with which expenditure may be identified. Cost unit is a unit of measurement in which cost may be ascertained. The CIMA, London, defines a cost of unit as “a unit of quantity of product or service or time in relation to which costs may be ascertained or expressed.” Proper selection of unit is very important in ascertaining the cost. Unit selected should be clear, simple and commonly used. Following are some examples of cost units:

Product/ Service	Cost Unit	Product/ Service	Cost Unit
Brickworks	Per 1000 brick	Soaps	Number/Carton
Building	Square foot	Wire / Cable	Meter / Kilometer
Cement	Tonne	Dairy (Milk)	Liter
Power	Kilowatt	Goods transport	Bag/Ton kilometer
Paper	Rim	Passenger transport	Passenger kilometer
Food grains	Kg./Quintal/Tonne	Wood / Gas	Cubic Feet (cft)
Sugar	Kg./Quintal/Tonne	Hospital	Per patient day

Cost centre:

According to the CIMA, London Cost centre means “a location, person or item of equipment (or group of these) for which cost may be ascertained and used for the purpose of cost control”. Thus cost center represents a head of account under which cost are recorded or gathered to facilitate their distribution and control. In the process of ascertaining the cost of any product in the first stage, the general costs (expenses) of the firm are classified department-wise or equipment-wise or significant person-wise, depending upon the suitability of situation. These different departments / equipments /persons with reference to which costs are collected for cost ascertainment and cost control are called cost centre. After ascertaining the cost incurred at these cost centre, it is absorbed by the units that are turned out with the help of these centre.

Cost centres may be classified as follows:

- i. Productive, unproductive and mixed cost centres.
- ii. Personal and impersonal cost centres.
- iii. Operation and process cost centres.

1.2.8 Sub-division/Components of Total Cost:

First of all cost are classified on the basis of nature, such as materials, labour and other expenses. Further distinction should be made of direct cost and indirect costs. All the direct costs are grouped under the heading of prime cost and indirect costs are known as overheads. All these costs are grouped under separate functional heads and presented to the management in the form of a statement, known as cost sheet.

The total cost is divided into different parts or divisions for the purpose of cost control and cost reduction. These parts are called as sub-division/components of cost. By grouping the elements of cost the following divisions of cost are obtained.

1. Prime Cost/Direct Cost/First Cost:

Direct Material + Direct Labour + Direct Expenses

2. Works/Factory Production/Manufacturing Cost:

Prime Cost + Works or Factory Overheads

3. Cost of Production/Office Cost:

Works Cost + Office and Administration Overheads

4. Cost of Goods Sold:

Cost of Production + Opening Stock of Finished Goods – Closing Stock of Finished Goods

5. Cost of Sales/Total Cost:

Cost of Goods Sold + Selling and Distribution Overheads

The difference between the cost of sales and sales represents **profit or loss**.

1.2.9 Cost Sheet:

A cost sheet is a statement which is prepared to show the total cost as well as components of cost. It shows the break-up and build-up of costs. It is a document which provides for the assembly of the detailed cost of a cost centre or a cost unit. It analyses and classifies in a tabular form the cost of different items for a particular period. It also shows the cost per unit of a product or service at different stages of total cost as well as at different stages of product or service. Cost Sheet may be

prepared on the basis of actual cost or estimated cost. Cost Sheet includes only cost therefore non-cost items, purely financial items, provisions and incomes are not included in cost sheet.

Uses of Cost Sheet:

The following are the uses of the cost sheet.

- Presentation on cost information.
- Determination of selling price.
- Ascertainment of profitability.
- Product wise and Location wise cost Analysis.
- Inter- firm and Intra- firm cost comparison.
- Preparation of Cost Estimates for submitting tenders / quotations.
- Preparation of Budgets.
- Disclosure of operational efficiency for Cost control.

Specimen form of Cost Sheet:

Cost Sheet for the year ended/period ended....

Units Produced.....				
Particulars	Units	₹	Total Cost ₹	Cost per unit ₹
Direct Materials/Raw Materials Consumed*	xxx	xxx		
Direct Wages		xxx		
Direct Expenses		-----		
PRIME COST	xxx		xxx	xxx
Add : Factory Overheads or Works On-cost.		xxx		
Indirect materials		xxx		

Particulars	Units	₹	Total Cost ₹	Cost per unit ₹
Indirect wages- inspection		xxx		
instructors, Gatemen,		xxx		
Drawings office salary		xxx		
Factory Rent, Rates, Taxes &		xxx		
Insurance		xxx		
Lighting heating		xxx		
Power & fuel		xxx		
Repairs & Maintenance		xxx		
Cleaning Expenses		xxx		
Cost of research & experiments		xxx		
Works manager salary		xxx		
Consumable stores		xxx		
Depreciation of plant & machinery		xxx		
Water supply		xxx		
Loose tools written off		xxx		
Haulage or crane expenses		<u>xxx</u>		
Cost of defective work		xxx		
		<u>xxx</u>	xxx	<u>xxx</u>
Less-Sale of scrap		xxx	xxx	xxx
WORKS COST	xxx		xxx	xxx
Add : Opening Stock of Work in progress	<u>xxx</u>		<u>xxx</u>	
			xxx	

Particulars	Units	₹	Total Cost ₹	Cost per unit ₹
Less : Closing Stock of Work in progress	<u>xxx</u>		<u>xxx</u>	
	<u>xxx</u>	xxx	<u>xxx</u>	
WORKS COST OF FINISHED GOODS		xxx	xxx	xxx
Add : Administration Overheads		xxx		
Counting house salaries		xxx		
Rent, Rates, Insurance		xxx		
Telephone & Postage		xxx		
Printing & Stationery		xxx		
Legal expenses				
Audit fees		xxx		
Depreciation of Office Furniture,		<u>xxx</u>		
Equipment & Building		<u>xxx</u>		
Repairs of Office Furniture,		xxx		
Equipment & Building		<u>xxx</u>		
	xxx	xxx		
COST OF PRODUCTION	<u>xxx</u>	<u>xxx</u>	xxx	xxx
Add : Opening Stock of Finished Goods	<u>xxx</u>	xxx	xxx	xxx
	xxx	xxx		
Less : Closing Stock of Finished Goods		xxx	xxx	xxx
COST OF GOODS SOLD		xxx		
Add : Selling & Distribution Overheads		xxx		
Sales Commission		xxx		
Salesmen's salaries		xxx		

Particulars	Units	₹	Total Cost ₹	Cost per unit ₹
Advertisement & samples				
Carriage outwards		xxx		
Bad Debts		xxx		
Depreciation & expenses of		xxx		
delivery van		xxx		
Debt collection charges		<u>xxx</u>		
Rent of warehouse		xxx		
Sample & other free gifts				
Showroom rent & rates				
Traveller's salaries, commission	xxx		<u>xxx</u>	<u>xxx</u>
			xxx	xxx
COST OF SALES	xxx		<u>xxx</u>	<u>xxx</u>
Profit / Loss			<u>xxx</u>	<u>xxx</u>
SALES				

***Raw Materials Consumed**

Particulars	₹
Opening Stock of Raw Materials	xxx
Add: Purchase of Raw Materials	xxx
Carriage inwards, Purchase Expenses,	xxx
Octroi etc.	<u>xxx</u>

Less : Closing Stock of Raw Material	xxx	
Material lost	xxx	
Material transferred to job or department	<u>xxx</u>	<u>xxx</u>
Raw Material Consumed		<u>xxx</u>

Note: While preparing the cost sheet financial items (income and expenses) are not considered, because such item do not form, a part of the costs. The following items are not including in cost sheet.

Examples of financial and non-cost expenses:

1) Preliminary expenses. 2) Interest on capital. 3) Cash discount. 4) Income tax. 5) Donation, 6) Capital losses. 7) Goodwill written off 8) Discount on issue of shares & debentures 9) Interest on loan, overdraft 10) Capital expenditure 11) Underwriting commission 12) Dividend to shareholders. 13) Commission to managing directors or partners. 14) Debenture interest transferred to sinking fund 15) Provision for doubtful debts 16) Obsolescence loss. 17) Bonus to shareholders. 18) Excess depreciation. 19) Cash discount. 20) Abnormal loss. 21) Interest on debenture. 22) Fines and penalties. 23) Charities. 24) Damage paid under court order.

Examples of financial Incomes

1) Capital gains or profit. 2) Interest on investment. 3) Abnormal gains. 4) Stores adjustments. 5) Interest on bank deposits. 6) Dividend received on share and investment. 7) Rent received and share transfer fees received.

1.2.10 Quotation:

Cost sheet is prepared with the help of actual costs. On the basis of cost sheet we can prepare the estimated cost sheet which can be termed as tender or quotation for the purpose of determine selling price or predetermine the costs. Cost estimation is the process of pre-determining the cost of goods or services. Estimated costs are the future and budgeted costs and are based on the average of past actual costs adjusted for and anticipated changes in future.

A statement of price that is presented for a work order to be executed or service to be rendered or goods to be supplied is called as 'Quotation.' It is also termed as 'Tender.' Tender and Quotation are synonymously used. Generally the term 'Tender'

is used in the Governmental transactions and the term 'Quotation' is used in non-governmental transactions.

Check Your Progress:

A. Choose the correct alternative:

1. The main objectives of cost accounting are
 - a) Cost ascertainment
 - b) Cost control
 - c) Cost reduction
 - d) All of above
2. costs vary in direct proportion to volume of output.
 - a) Fixed
 - b) Variable
 - c) Total
 - d) None of above
3. All type of indirect expenses constitute the
 - a) Prime Cost
 - b) Overheads
 - c) Total Cost
 - d) None of above
4. Prime Cost includes
 - a) Direct Materials
 - b) Direct Labour
 - c) Direct Expenses
 - d) All of above
5. Which of the following expenses is not included in the Cost Sheet?
 - a) Works Manager Salary
 - b) Rent
 - c) Interest on Loan
 - d) Carriage Outward
6. Which of the following expenses is not included in the Cost Sheet?
 - a) Depreciation on Machinery
 - b) Insurance
 - c) Cost of Defective Work
 - d) Excess Depreciation

B. State True or False.

1. Financial accounting and cost accounting are complementary to each other.
2. Cost accounting is the oldest branch of accounting.
3. The scope of cost accounting includes cost ascertainment cost presentation and cost control.
4. Cost accounting is nothing but a post-mortem of past costs.
5. Cost accounting is an instrument of management control.

6. Cost Sheet is a statement which gives the breakup of total cost by elements and sub divisions.
7. Variable cost per unit will remain the same.
8. Fixed cost per unit remains unaffected either with the increase or decrease in the output.
9. Abnormal loss is not included in cost sheet.
10. Financial incomes are the part of cost sheet.

Illustrations:

1. From the following information given by Bharat Industries for the month March, 2014 prepare Cost Sheet showing the Prime cost, Factory Cost, Cost of Production and the Cost of Sales and Profit.

Direct materials	1,00,000	Lighting: Factory	1,250
Direct wages	25,000	Office	500
Direct expenses	5,000	Depreciation	
Oil & waste	250	Office Premises	1,250
Wages of Supervisor	2,500	Plant & Machinery	500
Wages of storekeeper	1,250	Consumable Stores	2,500
Motive Power	500	Managers Salary (3/4	
Rent: Factory	5,000	factory, 1/4 office)	5,000
Office	2,500	Directors Fees	1,250
		Office printing &	500
Repairs & Renewals		stationery	125
Factory Plant	1,250	Telephone Charges	250
Machinery	2,500	Postage & Telegram	1250
Office Premises	500	Salesmen's commission &	
Carriage Outward	375	salary	500
Sales	2,00,000	Travelling expenses	1,250
		Advertising	500
		Warehouse Charges	

Solution: 1**Cost Sheet for the month March, 2014**

Particulars	₹	Total Cost ₹
Direct Materials		100000
Direct Wages		25000
Direct Expenses		5000
Prime Cost		130000
Add: Factory Overheads		
Oil & waste	250	
Wages of Supervisor	2500	
Wages of storekeeper	1250	
Motive Power	500	
Rent: Factory	5000	
Repairs and Renewals – Factory Plant	1250	
Machinery	2500	
Lighting – Factory	1250	
Depreciation – Plant & Machinery	500	
Consumable Stores	2500	
Manager's Salary (Factory – $\frac{3}{4}$)	<u>3750</u>	<u>21250</u>
Factory Cost		151250
Add: Office and Administration Overheads		
Rent – Office	2500	
Repairs and Renewals – Office Premises	500	
Lighting – Office	500	
Depreciation – Office Premises	1250	
Manager's Salary (Office – $\frac{1}{4}$)	1250	
Directors Fees	1250	
Office Printing and Stationary	500	
Telephone Charges	125	
Postage and Telegrams	<u>250</u>	<u>8125</u>
Cost of Production		159375
Add: Selling and Distribution Overheads		

Particulars	₹	Total Cost ₹
Carriage Outward	375	
Salesmen's Commission and Salary	1250	
Travelling Expenses	500	
Advertising	1250	
Warehouse Charges	<u>500</u>	<u>3875</u>
Cost of Sales/Total Cost		163250
Profit		36750
Sales		<u>200000</u>

2. From the following particulars prepare a cost sheet showing the total cost per tonne for the period ended 31st March, 2014.

Particulars	₹	Particulars	₹
Raw Materials	33000	Productive Wages	35000
Direct Expenses	3000	Rent (Office)	500
Water Supply	1200	Factory Insurance	1100
Unproductive Wages	10500	Office Insurance	500
Factory Rent	7500	Legal Expenses	400
Factory Lighting	2200	Factory Heating	1500
Rent of Warehouse	300	Dep. On Plant and Machinery	2000
Dep. On Office Building	1000	Dep. On Delivery Van	200
Motive Power	4400	Haulage	3000
Director's Fees (Office)	2000	Director's Fees (Works)	1000
Bad Debts	100	Factory Cleaning	500
Advertising	300	Sundry Office Expenses	200
Sales Department Salary	1500	Estimating Expenses	800
Upkeep of Delivery Van	700	Factory Stationery	750
Bank Charges	50	Office Stationery	900
Loose Tools Written off	600	Commission on Sales	1500

The total output for the period has been 10000 tonnes.

Solution: 2**Cost Sheet for the month March, 2014****Output 10000 Tons**

Particulars	₹	Total Cost ₹	Cost per Ton ₹
Direct Materials (Raw Materials)		33000	
Direct Wages (Productive Wages)		35000	
Direct Expenses		3000	
Prime Cost		71000	7.10
Add: Factory/Works Overheads			
Water Supply	1200		
Unproductive Wages	10500		
Factory Rent	7500		
Factory Lighting	2200		
Factory Insurance	1100		
Factory Heating	1500		
Dep. On Plant and Machinery	2000		
Haulage	3000		
Director's Fees (Works)	1000		
Factory Cleaning	500		
Estimating Expenses	800		
Factory Stationery	750		
Motive Power	4400		
Loose Tools Written off	600	<u>37050</u>	<u>3.70</u>
Factory/Works Cost		108050	10.80
Add: Office and Administration Overheads			
Rent (Office)	500		
Dep. On Office Building	1000		
Office Insurance	500		
Legal Expenses	400		
Director's Fees (Office)	2000		
Bank Charges	50		

Particulars	₹	Total Cost ₹	Cost per Ton ₹
Office Stationery	500		
Sundry Office Expenses	<u>900</u>	<u>5550</u>	<u>0.56</u>
Cost of Production		113600	11.36
Add: Selling and Distribution Overheads			
Rent of Warehouse	300		
Dep. On Delivery Van	200		
Bad Debts	100		
Advertising	300		
Sales Department Salary	1500		
Commission on Sales	1500		
Upkeep of Delivery Van	<u>700</u>	<u>4600</u>	<u>0.46</u>
Cost of Sales/Total Cost		118200	11.82

3. From the following particulars prepares a cost statement showing the components of total cost and profit for the year ended 31st March, 2014.

Particulars	On 1' April 2013	On 31' March 2014.
Stock of finished goods	6,000	15,000
Stock of raw materials	40,000	50,000
Work in progress	15,000	10,000
Purchase of raw materials		4, 75,000
Carriage inwards		12,500
Wages		1, 75,000
Works managers salary		7 30,000
Factory employees salary		60,000
Factory rent, taxes & insurance		7,250
Power expenses		9,500
Other production expenses		43,000

Sales for the year	8, 60,000
Income tax	5,000
Interest on debentures	10,000
Transfer to sinking fund for replacement of machinery	20,000
Dividend received	2,500
Goodwill written off	10,500
Payment of sales tax	16,000
General expenses	20,500
Office rent	12,000

Solution: 3

Statement of Cost and Profit.

For the year ended 31-3-2014.

Particulars	₹	₹
Opening stock of Raw Materials	40000	
Add : Purchase of Raw Materials	475000	
Carriage Inward	12500	
	527500	
Less : Closing stock of Raw Materials	50000	
Material Consumed		477500
Direct Wages		175000
Direct expenses		-----
PRIME COST		652500
Add : Factory Overheads		
Factory employees salary	60000	
Works managers salary	30000	
Factory rent taxes & Ins.	7250	
Power expenses	9500	
Other production expenses	43000	
		149750

		802250
Add : Opening Work-in Progress		15000
		817250
Less : Closing Work-in Progress		10000
FACTORY COST		807250
Add : Office & Administration Overheads		
General expenses	20500	32500
Office Rent	12000	
COST OF PRODUCTION		839750
Add : Opening stock of finished goods		6000
		845750
Less : Closing stock of finished goods		15000
COST OF GOODS SOLD		830750
Add: Selling & Distribution Overheads		
Sales Tax		16000
COST OF SALES		846750
Profit (Balancing figure)		13250
SALES		<u>860000</u>

4. From the following figures, prepare the cost sheet to show the cost of production of each unit of the goods manufactured. Also prepare a statement to show the profit earned.

Particulars	₹
Opening stock	
Raw Materials - 500units	300
Finished goods - 500 units	1,610
Purchases:	
Raw Materials - 10,000 units	9,635

Closing stock

Raw Materials - 300 units	755
Finished goods - 700 units	1,834
Office Salaries, Rent & Rates	1,224
Repairs & depreciation of Plant & Machinery	1,020
Printing & Stationery	918
Manufacturing Wages	9,690
Coal Consumed	2,958
Rent & Rates of Factory	1,734
Commission on Sales	500

There was no wastage during production. Selling price was ₹ 3 per unit.

Solution -4:

Statement of Cost and Profit

(No. of Units Produced- 10200)

Particulars	Units		Total Cost ₹	Cost Per unit
Opening stock of raw materials	500	300		
Add: Purchases of R. M.	<u>10000</u>	<u>9635</u>		
	10500	9935		
Less: Closing Stock of R. M.	300	755		
Raw Materials Consumed	10200		9180	.90
Manufacturing Wages			9690	.95
Direct expenses			--	
PRIME COST			18870	1.85
Add : Factory On- Cost:				
Repairs & depreciation of plant		1020		
Coal Consumed		2958		
Rent & Rates		<u>1734</u>	5712	
FACTORY COST			24582	2.41
Office & Administrative On- cost :				

Particulars	Units		Total Cost ₹	Cost Per unit
Salary, Rent & Rates		1224		
Printing & Stationery		918	2142	0.21
COST OF PRODUCTION			26724	2.62
Add: Opening stock of finished goods	500		<u>1610</u>	
	10700		28334	
Less: Closing stock of finished goods	700		<u>1834</u>	
COST OF GOODS SOLD	10000		26500	2.65
Add: Selling & Distribution On-cost				
Commission on sales			500	0.05
COST OF SALES			<u>27000</u>	<u>2.70</u>
Profit (Balancing figure)			3000	0.30
SALE (@ Rs. 3 per. unit. for 10,000 units sold)			30000	3.00

5. Given below is Profit & Loss Account of a manufacturing Co. for the year ending 31st March.

Profit and Loss Account

Dr.

Cr.

Particulars.	₹	Particulars.	₹
To Opening stock of Raw Materials	10000	By Sales	445800
Purchase of Raw Materials	150000	By Closing stock of	12000
Wages	124000	Raw Materials	
Power	36000		
Establishment Exp.	23000		
Factory 8000			
Office 15000			

Particulars.	₹	Particulars.	₹
Rent	5000		
Factory 2000			
Office 3000			
Advertisement	6000		
Traveller's Commission	4000		
Maintenance of Delivery Vans	5000		
Rent of Warehouse	2500		
Telephone	800		
Factory 300			
Office 500			
Electric Charges	600		
Factory 200			
Office 400			
Depreciation.	800		
Factory 100			
Office 700			
Depreciation of factory machinery	3000		
Interest on loan	1000		
Bad debts	600		
Miscellaneous Exp.	11000		
Factory 2000			
Office 9000			
Net Profit	74500		
	457800		457800

The following analysis of office expenditure is given to you:

Office Expenditure	Administration	Selling	Distribution
Office Establishment	50%	40%	10%
Office Telephone	30%	50%	20%
Office Rent	40%	60%	Nil
Office Electric charges	20%	70%	10%
Office Miscellaneous Expenses	65%	20%	15%
Use of office Furniture	60%	30%	10%

From the above Profit & Loss Account, Prepare a statement showing different elements of cost bringing out figures for Administration, Selling and distribution separately.

Solution: 5

Statement of Cost

Particulars.	₹	₹
Opening stock of Raw Materials	10000	272000
Add : Purchase of Raw Materials	150000	
	160000	
Less : Closing stock of Raw Mat.	12000	
Material Consumed	148000	
Wages	124000	
Prime Cost		
Add : Factory Overheads		
Power	36000	323600
Establishment	8000	
Rent	2000	
Telephone	300	
Electricity Charges	200	
Dep. of Furniture	100	
Dep. of Machinery	3000	
Miscellaneous Expenses	2000	
Factory Cost		
Add: Office Overheads.		
A) Administration Overheads		

Establishment	7500	
Rent	1200	
Telephone	150	
Electricity Charges	80	
Dep. Of Furniture	420	
Miscellaneous Expenses	5850	15200
Cost of Production		338800
B) Selling Overheads		
Establishment	6,000	
Rent	1,800	
Advertisement	6,000	
Traveller's commission	4,000	
Telephone	250	
Electricity Charges	280	
Bad Debts	600	
Dep. Of Furniture	210	20940
Miscellaneous Expenses	1800	359740
C) Distribution Overheads		
Establishment	1,500	
Rent of warehouse	2,500	
Telephone	100	
Electricity Charges	40	
Maintenance of Delivery Van	5,000	
Dep. Of Furniture	70	
Miscellaneous Expenses	1350	10560
Total Cost/Cost of Sales		370300

Note: - Interest on loan being a pure financial matter, it is excluded from cost.

6. Following are the particulars for the production of 2000 Fans of a company for the year 2014-15.

Particulars	₹
Cost of Raw Materials	3, 20,000
Wages	4, 80,000
Manufacturing Expenses	2, 00,000
Salaries	2, 40,000
Rent, Rates & Insurance	40,000
Selling Expenses	1, 20,000
General Expenses	80,000
Sales	16, 00,000

The company plans to manufacture 3,000 Fans during 2015-16. The following additional information is supplied regarding it.

- 1) The price of material is expected to increase by 20%
- 2) Wage rates are expected to show an increase of 5%
- 3) Manufacturing expenses will rise in proportion to the combined cost of materials and wages.
- 4) Selling expenses per fan will remain the same.
- 5) Other expenses will remain unaffected by rise in output.

You are required to prepare cost sheet for the year 2014-15 and 'Estimated price' of 3,000 Fans to be produced during the year 2015-16 at which the Fans would be sold so as to show profit of 10% on sales.

Solution: 6**Cost Sheet**

For the year 2014-2015

Output = 2000 Fans

Particulars	₹	Total Cost ₹	Per Unit Cost ₹
Materials		3,20,000	160
Wages		4,80,000	240
Prime Cost		8,00,000	400
Add : Factory Overheads			
Manufacturing Expenses		2,00,000	100
Factory Cost		10,00,000	500
Add : Office Overheads			
Salaries	2,40,000		
Rent, Rates & Insurance	40,000		
General Expenses	80,000	3,60,000	180
Cost of Production		13,60,000	680
Add : Selling Overheads			
Selling Expenses		1,20,000	60
Total Cost		14,80,000	740
Profit		1,20,000	60
Sales		16,00,000	800

**Quotation / Estimated Price for 3000 Fans to be produced
During the year 2015-2016**

Particulars	₹	₹	Per Unit Cost ₹
Materials (3000 *192)		576000	192
Wages (3000*252)		756000	252
Prime Cost		1332000	444
Add : Factory Overheads			
Manufacturing Expenses (100*444/400) (3000*111)		333000	111
Factory Cost		1665000	555
Add : Office Overheads			
Salaries	240000		
Rent, Rates & Insurance	40000		
General Expenses	80000	360000	120
Cost of Production		2025000	675
Add : Selling Overheads			
Selling Expenses (3000*60)		180000	60
Total Cost		2205000	735
Profit (90:2205000:10:?)			
(2205000*10/90)		245000	82
Sales.		2450000	827

7. A company finds that in 2014-15 the cost of manufacturing 200 scooters was Rs. 2400000 and selling price was Rs. 17500 per scooter. The cost was made up as:

Particulars	₹
Materials	1000000
Labour	800000
Factory Overheads	200000
Establishment and general expenses	<u>400000</u>
	<u>2400000</u>

For the year 2015-16 the company estimates the cost as under:

1. That each scooter will require materials of ₹ 5200 and labour ₹ 4500.
2. That the factory overheads will bear the same relation to wages as in the previous period.
3. That the office overheads percentage on factory cost will be the same as in the past.

Prepare a statement showing the profit per unit if company reduces the price by ₹ 300.

Solution: 7

Statement of Cost

For 200 scooters

	₹
Materials	10,00,000
Labour	8,00,000
Prime Cost	18,00,000
Factory Overheads	2,00,000
Works/Factory Cost	20,00,000
Office Overheads	4,00,000
Cost of production	24,00,000

Working Notes:

- 1) Percentage of Factory overheads to Labour
= $\text{Factory Overheads} / \text{Labour} \times 100$
= $200000 / 800000 \times 100 = 25\%$
- 2) Percentage of Office Overheads to Factory/Works Cost
= $\text{Office Overheads} / \text{Factory or Works Cost} \times 100$
= $400000 / 2000000 \times 100 = 20\%$

Estimated Cost Sheet

Particulars	Per Unit Cost ₹
Materials	5200
Labour	4500
Prime Cost	9700
Factory Overheads (25% of Rs 4500)	1125
Works/Factory Cost	10825
Office Overheads (20% of Rs 10825)	2165
Cost of production	12990
Profit (balancing figure)	4210
Selling Price	17200

8. Lotus Company is a metal and wood cutting manufacturer, selling products to the home construction market. Provide you the following data for the month of October, 2019.

Particulars	₹
Sandpaper	5000
Material-handling costs	175000
Lubricants and Coolants	12500
Miscellaneous indirect manufacturing labour	100000
Direct manufacturing labour	750000
Direct materials, October 1, 2019	100000
Direct materials, October 31, 2019	125000
Finished goods, October 1, 2019	250000
Finished goods, October 31, 2019	375000
Work-in-process, October 1, 2019	25000
Work-in-process, October 31, 2019	35000

Plant-leasing costs	135000
Depreciation plant equipment	90000
Property taxes on plant equipment	10000
Fire insurance on plant equipment	7500
Direct material purchased	1150000
Sales Revenues	3400000
Marketing Promotions	150000
Marketing Salaries	250000
Distribution Costs	175000
Customer – Service Costs	250000

Required:

- 1) Prepare an income statement with a separate supporting schedule of cost of goods manufactured
- 2) For all manufacturing items indicate by V or F whether each is basically a variable cost or a fixed cost (where the cost object is a product unit).

Solution:

**Lotus Company's
Schedule for Cost of Goods Manufactured
for the month ending Oct 2019**

Particulars	₹	₹
Direct materials:		
Beginning Inventory	1,00,000	
Purchase of Direct Materials	11,50,000	
Cost of direct materials available for use	12,50,000	
Ending inventory	1,25,000	
Direct materials used		11, 25,000(V)
Direct manufacturing labour		7, 50,000(V)

Indirect manufacturing costs:

Sand Paper	5.000(V)	
Material-handling cost	1.75.000(V)	
Lubricants and coolants	12,500(V)	
Misc. indirect manufacturing labour	1,00,000(V)	
Plant leasing cost	1,35.000(F)	
Depreciation-plant and equipment	90,000(F)	
Property tax-plant and equipment	10,000(F)	
Fire insurance-plant and equipment	7.500(F)	5, 35,000
Manufacturing cost incurred during the month of October, 2019		24, 10,000
Add: Opening work-in-progress		25.000
		<u>24, 35.000</u>
Less: Closing work-in-progress		35,000
Cost of goods manufactured (to income statement)		<u>24, 00.000</u>

Lotus Company's**Income Statement for the month ending Oct 31, 2019**

Particulars	₹	₹
Revenues		<u>34.00.000</u>
Cost of goods sold:		
Beginning finished goods	2,50,000	
Cost of goods manufactured	24,00,000	
Cost of goods available for sale	<u>26,50,000</u>	
Ending finished goods	3,75,000	22.75.000
Gross Margin		<u>11.25,000</u>

Marketing, Distribution and Customer Service Costs:

Marketing promotions	1,50,000	
Marketing salaries	2,50,000	
Distribution costs	1,75,000	
Customer service cost	2,50,000	8,25,000
Operating Income		<u>3,00,000</u>

1.3 Summary:

Cost accounting is a developed branch of accounting. It is developed to overcome the limitations of financial accounting. Cost accounting is the process of classifying, recording and appropriate allocation of expenditure for the determination of the total cost of a product or service. It is the science, art and practice of a cost accountant. The scope of cost accounting is very wide. It includes cost collection and analysis, cost control and cost reduction, policy framing, budgeting, cost audit, price determination. The main objectives of cost accounting are ascertainment of cost, cost control, cost reduction, determining the selling price, controlling the efficiency and providing useful basis for operating policy of the business. Cost accounting is developed to help the management. Management with the help of cost accounting, can find out total cost as well as per unit cost, control and reduce the cost, determine the selling price, ascertain the profit etc. The headings under which the total expenditure is analysed are known as the elements of cost. All these expenses can be basically classified into three categories i.e. Materials, Labour and Other expenses. The cost is ascertained on the basis of Cost Unit, Cost Centre etc.

A Cost Sheet is a statement which shows the break-up and build-up of costs. It discloses the total cost as well as the cost per unit of production. It also helps for determination selling price and ascertainment of profitability. While preparing the cost sheet financial items (income and expenses) are not considered because such item does not form a part of the cost.

1.4 Terms to Remember

1. **Cost:** The term cost indicates the amount of expenditure incurred on or attributable to a specified thing or activity or cost unit.

2. **Costing:** It is a technique and process of ascertaining costs. This technique consists of principles and rules which govern the procedure of ascertaining the cost of product or service.
3. **Cost Accounting:** It is accounting system used in costing. That means it is the procedure of classifying, recording and appropriate allocation of expenditure for the determination of the cost of product or service.
4. **Cost Accountancy:** Cost accountancy is the application of costing and cost accounting principles, methods and techniques to the science, art and practice of cost control and the ascertainments of profitability.
5. **Cost Sheet:** A cost sheet is a statement which shows the break- up and build-up of costs.
6. **Materials:** Cost of tangible, physical input used in relation to output/production e.g. cost of raw materials, consumable stores, maintenance items etc.
7. **Labour :**Cost incurred in relation to human resources of the enterprise.
8. **Expense :** Cost of operating and running the enterprise, other than materials and labour, they are the residual category of costs. e.g. factory rent, office maintenance, salesmen salary etc.

1.5 Answers to Check Your Progress:

A : 1 – d, 2 – b, 3 – b, 4 – d, 5 – c, 6 – d

B : 1 – T, 2 – F, 3 – T, 4 – F, 5 – T, 6 – T, 7 – T, 8 – F, 9 – T, 10 – F

1.6 Exercise

1. What is cost accounting? Discuss the objectives of cost accounting.
2. Explain the scope of cost accounting.
3. State the importance of cost accounting.
4. Cost accounting has become to be an essential tool of the management — Comment
5. What is cost accounting? Explain the nature of cost accounting.
6. What is meant by elements of cost? Explain the elements of cost.

7. How are elements of cost useful for management? What are the different types of expenditure that are not included in cost accounts?
8. Define overheads and explain the functional classification of overheads.
9. Short Notes:-
 - a) Cost Accounting
 - b) Scope of Cost Accounting
 - c) Objectives of Cost Accounting
 - d) Prime Cost
 - e) Classification of cost.
 - f) Cost Centre.
 - g) Cost Unit.
 - h) Overheads

10. Prepare a cost sheet from following information.

Particulars	₹	
Material Purchases	3, 20,000	
Wages to direct workers	2, 00,000	
Salary of accountant	40,000	
Repairs of Machines	20,000	
Indirect material	30,000	
Indirect wages	25,000	
Expenses for industrial exhibition	12,000	
Power for machine	24,000	
Salary of factory Supervisor	30,000	
Showroom expenses	50,000	
Office expenses	34,000	
Inventory work	Opening	Closing
Raw material	40,000	60,000
Work in progress	50,000	40,000
Finished goods	35,000	30,000
Sales	10, 00,000	

Ans.: Prime Cost = ₹ 5, 00,000; Works cost gross = ₹ 6, 29,000 Work cost of finished goods = ₹ 6, 39,000 Cost of Production = ₹ 7, 13,000; Cost of production of goods sold = ₹ 7, 18,000; Cost of sales = ₹ 7, 80,000; Profit = ₹ 2, 20,000/-

- 11.** The following figures are extracted from the books of Hindustan Ltd. for the year ended. Prepare a cost sheet showing clearly the cost per unit under the various elements, direct and indirect cost and also the profit / loss per unit.

Particulars	₹
Direct Material	24, 00,000
Direct Labour	5, 00,000
Depreciation of factory building	15,000
Branch office expenses	40,000
Depreciation of office building	8,000
Depreciation of staff Cars	12,000
Insurance for staff Cars	1,500
Office Building	1,200
Factory Building	1,500
Delivery van maintenance & running Exp.	10,000
Salaries including-	3, 00,000
Sales Manager	25,000
Factory Chief Engineer	25,000
Finished goods warehouse expenses	20,000
Electricity (including Rs. 4,000 for Administrative office)	40,000
Advertisement	20,000
Sundry factory expenses	3, 40,000
Sales Promotion	5,000

Office administration expenses 50,000

Expenses for participation in industrial exhibition 10,000

Units produced and sold (10,000) units)

Note: - Balance of salary considers Administrative salary.

Ans. Prime Cost = ₹ 29, 00,000; Works Cost = ₹ 33, 17,500; Cost of production ₹ 36, 84,200; Cost of Sales = ₹ 37, 74,200; Profit = ₹ 4, 25,800/-

12. Ashirwad Ltd. submits the following information on 31st March-

Sales for the year ₹ 2, 75,000

Inventories at the beginning of the year were-

Finished goods ₹ 7,000

Work in progress ₹ 4,000

Purchase of material for the year were ₹ 1, 10,000

Materials inventory at the beginning of the year was ₹ 3,000 and at the end of the year ₹ 4,000

Direct labour was ₹ 65,000

Factory overheads were 60% of the direct labour cost

Inventories at the end of the year were-

Work in progress ₹ 6,000

Finished goods ₹ 8,000

Other expenses for the year were-

Selling expenses 10% of sales

Administrative expenses 5% of the sales.

Prepare statement of Cost.

Ans : i) Prime Cost = ₹ 1,74,000; ii) Works Cost gross = ₹ 2, 13,000 iii) Works Cost of Finished goods = ₹ 2, 19,000; iv) Cost of production = ₹ 2, 24,750 v) Profit = ₹23,750/-

13. The following extract of costing information relates to a commodity for the half year ending 31st March 2015.

Purchase of Raw Materials	1, 20,000
Works Overheads	48,000
Direct wages	1, 00,000
Carriage on purchases	1,440
Stock (1st Oct. 2014)	
Raw Materials	20,000
Finished products (1,000 tons)	16,000
Stock 31st March 2015.	
Raw Materials	22,240
Finished Products (2,000 tons)	32,000
Work in progress (1st Oct. 2007)	4,800
Work in progress (31st March 2008)	16,000
Sales — finished Products	3, 00,000

Selling and distribution overheads are ₹ 1 per ton sold, 16,000 tons of commodity were produced during the period.

Ascertain - i) Value of raw materials used, ii) Cost of output for the period, Cost of sales, iv) Net profit for the period and v) Net profit per ton of the commodity:

Ans : i) Value of raw materials used = ₹ 1, 19,200 ii) Cost of output for the period = ₹ 2, 56,000, iii) Cost of sales = ₹ 2, 55,000, iv) Net profit = ₹ 45,000 v) Net profit per ton = ₹3/-

14. Prepare a cost sheet from the details given below for the year ended 31st March 2015.

Particulars.	₹
Raw materials	1, 98,000
Productive wages	2, 10,000

Direct Expenses	18,000
Unproductive wages	63,000
Factory rent & taxes	45,000
Factory lighting	13,200
Factory heating	35,400
Haulage	18,000
Directors fee (Works)	6,000
Directors fee (Office)	12,000
Factory cleaning	3,000
Sundry office expenses	1,200
Estimating (Factory)	4,800
Factory stationery	4,500
Office stationery	5,400
Loose tools written off	3,600
Rent & taxes (Office)	3,000
Water supply	7,200
Factory insurance	6,600
Office insurance	3,000
Law charges	2,400
Rent of warehouse	1,800
Depreciation on plant & machinery	12,000
Depreciation on office building	6,000
Depreciation on delivery van	1,200
Bad debts	600
Income tax provisions	5,000
Donations	10,000

Advertisement	1,800
Sales department salaries	9,000
Upkeep of delivery van	4,200
Bank charges	300
Commission on sales	9,000

The total output for the period has been 60,000 units.

Answer: Prime Cost ₹ 426000, Factory Cost ₹ 648300, Cost of Production ₹ 681600, Cost of Sales ₹ 709200

15. The accounts of Pooja Company Ltd. show for 2008:- Materials ₹ 3,50,000; Labour ₹ 2,70,000; Factory Overheads ₹ 81,000; and Administration overheads ₹ 56,080.

What price should the company quote for a refrigerator? It is estimated that ₹ 5,000 in a material and ₹ 3,500 in labour will be required for one refrigerator. Absorb Factory overheads on the basis of labour and Administration overheads on the basis of works cost. A profit of 12.5% on selling price is required.

(Answer: Total Prime Cost ₹ 620000, Works Cost ₹ 701000, Cost of Production ₹ 757080 and Per Unit Prime Cost ₹ 8500, Works Cost ₹ 9550, Cost of Production ₹ 10314, Selling Price ₹ 11787)

16. The accounts of Bharat Manufacturing Company for the year ended 31st December 2014 show the following.

Particular	₹
Stock of Raw Materials (1-1-2007)	1, 87,500
Stock of Raw Materials (31-12-2007)	1, 44,000
Purchase of Raw Materials	5, 55,000
Carriage & Cartage on Purchases	21,450
Carriage & Cartage outwards	12,900
Direct charges	75,000
Drawing Office salaries	19,500
Counting Housing salaries	37,800

Repairs of Plant & Machinery	19,500
Rent, Taxes & Insurance - Factory ₹ 25,500	
Office ₹ 6,000	31,500
Reserve for doubtful debts	6,000
Rent of warehouse	13,350
Income Tax paid	75,000
Salesmen's Travelling Expenses	6,300
Productive wages	3, 00,000
Show-room rent and rates	13,100
Audit Fees	22,500
Salesmen's salaries and commission	10,000
Air conditioning charges	9,750
Other production expenses	7,500
Depreciation: Plant & Machinery ₹ 22,500	
Furniture ₹ 750	23,250
Gas and Water Factory ₹ 3,750	
Office ₹ 1,500	5,250
Manager's salary (3/4 Factory & 'A Office)	30,000
Goodwill written off	7,500
Transfer to sinking fund	30,000
Sales	14, 25,000

Prepare a statement of cost.

(**Answer:** Cost of Material consumed ₹ 619950, Prime cost ₹ 994950; Factory cost ₹ 1115700, Cost of Production ₹ 1201500, Cost of sales ₹ 1257150, and Profit ₹ 167850)

Practical: Group Discussion:

Group Discussion is an effective tool in problem solving, decision making and personality assessment. It improves your thinking, listening and speaking skills. It also promotes your confidence level. Group Discussion skills may ensure academic success, popularity and good admission or job offer.

Group Discussion is conducted under the supervision of a supervisor or testing officer or a board of testing officers. Generally two topics are given to the groups allowing them five minutes to discuss among themselves and come to conclusion out of the two. Any one from the group can communicate the decision of the group to the testing officer. In professional group discussion every topic or subject given for discussion has two sides, one is positive or acceptable and another is negative or non-acceptable. A candidate has to express his view on any one side. A group generally may be of 10 students/candidates. All the candidates in the group are given token numbers. The testing officer will closely observe your role during the discussion.

Rules/Guidelines for Group Discussion:

While group discussion everyone should take note of guidelines. Very brief discussion guidelines could include items like:

- Allow everyone a chance to speak.
- Listen respectfully and actively.
- Criticize ideas, not individuals.
- Commit to learning, not debating.
- Avoid blame, speculation, inflammatory language.
- Avoid assumptions about others, especially based on their perceived social group.

➤ Mistakes you must avoid in a Group Discussion:

While group discussion everyone should must try to avoid the common mistakes which are enlisted below:

- Don't take the lead, if you don't know the topic.
- Don't hesitate to take the lead, if you know it.

- Don't copy or follow someone else's ideas or comments.
- Don't contradict your own points.
- Don't avoid eye contact with fellow participants.
- Avoid interrupting others.

You must remember that your comments should be logical, justifiable, impressive, convincing and knowledgeable. If these aspects are covered, there will be clear chance of your success in the group discussion.

Example: In this unit example of group discussion is given for study purpose and it is based on the unit content. A teacher is a observer and 8 students are included in a group.

Topic for discussion: Is cost accounting is beneficial to all stakeholders of a business firm?

YES	NO
Friends or (Ladies and Gentlemen), to my mind cost accounting is beneficial to all stakeholders of a business firm.	Friends or (Ladies and Gentlemen), to my mind cost accounting is not beneficial to all stakeholders of a business firm.
1. The users/stakeholders of accounting information are internal and external. All these users/stakeholders are beneficial from cost accounting.	1. The users/stakeholders of accounting information are internal and external. All these users/stakeholders are not beneficial from cost accounting.
2. The internal users/stakeholders of accounting information include members of management at different levels and external users/stakeholders of accounting information include shareholders, creditors, financial analysts, government authorities, stock exchanges, labour unions etc. All these users/stakeholders are beneficial from cost accounting, to some or more extent.	2. The internal users/stakeholders of accounting information include members of management at different levels and external users/stakeholders of accounting information include shareholders, creditors, financial analysts, government authorities, stock exchanges, labour unions etc. Out of these only internal users/stakeholders are beneficial from cost accounting.

3. The important benefits of cost accounting are ascertainment of cost, cost control, reduction of cost which leads to maximize the profit ultimately beneficial to all users/stakeholders.	3. The important benefits of cost accounting are ascertainment of cost, cost control, reduction of cost which is useful to take various management decisions. Therefore only internal users/stakeholders are beneficial from cost accounting.
4. Cost accounting helps to prepare more accurate and reliable financial accounts which are helpful to all users/stakeholders.	4. Cost accounting helps to take different management decisions like make or buy, continue or drop a product, buy or lease, sell or process further, operate or shut down etc. which are helpful to only internal users/stakeholders.

Note- This is one of the examples of group discussion. Students should conduct such type of group discussions on various topics related to this unit.

1.7 References for Further Study:

1. Bhar B.K., Cost Accounting: Methods and Problems, Academic Publishers, Kolkata.
2. Jain S. P., Narang K. L., Cost Accounting, Kalyani Publishers, Ludhiana.
4. Jawahar Lal, Cost Accounting, Tata MaGraw Hill Publishing Co. Ltd., New Delhi.
5. CA Vinodkumar Agarwal & CA Subodh Shah, Cost Accounting.
6. CA Rakesh Agrawal, Cost Management



Unit-2

Job Costing and Unit Costing

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2.0 Objectives:

After studying this unit, students will be able :

1. To acquaint the knowledge and skill to prepare job and unit cost sheet.
2. To realise the need of use of job and unit costing as a means of determination of cost in certain conditions.
3. To study preparation of cost sheet under job costing environment for the purpose of cost determination, control, tendering and calculating profit or loss.

2.1 Introduction:

Job Costing is an attempt to arrive at the cost of non standard, but one of a kind job undertaken by both large and small entrepreneurs to satisfy their customers. Since such activities are rare and non repetitive an attempt is made by the person in charge of the establishment to have a proper understanding of the effort involved and the consumption of material and other resources so as to know the cost thereof; based on which a proper quote can be given or conveyed. Such establishments do not have an elaborate set up for proper estimation of the job undertaken; but because of the personal involvement and grip over the day to day activities they are in a position to use their judgment and thumb rules to arrive at the estimation of the job cost for the sake of quotation. Besides; the repetitive nature of certain jobs makes their job easy for estimation; since they can always fall back upon the past records for judging the costs. In addition, we are familiar with the idea of unit costing, which is one of the most popular techniques for estimating costs in businesses that manufacture goods with standardised units, such as coal, cement, bricks, shoes, sugar, etc. As a result, we can determine or calculate the cost and profit per unit of production with the aid of the cost unit approach. This is done by creating monthly or quarterly cost sheets that include information about all of the costs that make up the overall cost. This unit help to understand the job and unit costing ideas, concept and preparation of cost sheet as per business concern.

2.2 Presentation of Subject Matter:

2.2.1 Meaning of Job and Unit Costing:

Industries which are manufacture products or render services against specific orders as distinct from continuous production for stock or sales; use the job costing or job order method of cost accounting. The method is also known under various other names, such as specific order costing, production order costing, job lot costing or lot costing. Every order in job costing is separate and it is not essential that the same manufacturing operations be carried out or the same materials be utilized in respect of each. However, a number of identical orders or identical products may be combined together to form lots or batches, each such lot or batch constituting a job order. In the job costing system, an order or a unit, lot, or batch of a product may be taken as a cost unit, i.e. a job. In job costing, there is no averaging of costs except to the extent that in the ascertainment of unit cost, the cost of a lot of products in one

order is obtained. A job or an order may extend to several accounting periods and job costs are, therefore, not related to particular periods.

Unit costing refers to a method of costing used by industries engaged in mass production of homogeneous/identical products. The basic feature of unit costing is that the cost units are identical. Unit costing is also known as “Single Output Costing”. Single or Output Costing is the form of Unit costing used when the enterprise produces basically one homogeneous product or one homogeneous product in two or more grades. Under this method, the cost per unit is arrived at by dividing the total cost by the total number of units produced. Thus, the cost ascertainment involves the following two stages:

- i. collection and functional analysis of all costs,
- ii. division of total cost by the total number of units produced in order to determine the cost per unit.

This procedure is applicable only when the organisation produces only one product. If, however, the organisation produces several grades of the same product, it becomes imperative to apportion the various costs between the various grades so that the Cost of each grade can be determined separately. Unit costing method can be successfully applied in those industries engaged in assembling, such as automobiles, electronics, typewriters, etc., and also in those industries engaged in production of homogeneous products, such as collieries, quarries, brick making, breweries, dairies, sugar, cement works etc. The unit cost is the overall cost incurred by a corporation to create, store, and sell a unit of a product or service. They're the same thing as the cost of sales and goods sold. By balancing fixed and variable expenses, businesses can improve the overall unit cost of their products. The rent, equipment, and insurance are fixed costs that are not affected by the number of units produced. On the other hand, variable costs are determined by the product generated, such as direct labour and direct material expenses. Wages given to employees who worked directly in production include indirect labour costs. The purchase costs of raw materials and those involved in production are direct material costs. Variable costs can be reduced by purchasing materials from the cheapest supplier or outsourcing production to an efficient manufacturer.

2.2.1.1 Job Costing and Unit Costing:

The ICMA Terminology provides an excellent description of job costing which defines it as “that form of specific order costing which applies where work is undertaken to customers’ special requirements and each order is of comparatively short duration. The work is usually carried out within a factory or work shop and moves through processes and operations as a continuously identifiable unit”.

Whereas Job Costing is customer specific or centric; and if the work order involves doing a job which involves manufacturing identical units; then cost per unit in respect of the work order is given by;

$$\text{Cost per unit} = \frac{\text{Total Cost of the Work Order}}{\text{No. of units in the Work Order}}$$

Unit Costing on the other hand is the method of costing used when the cost units are identical. The principal followed in simple, identical cost units should have identical costs; and this concept of equality of costs is the basic feature of unit costing. Thus in Unit Costing;

$$\text{Cost Per Unit} = \frac{\text{Total Cost}}{\text{Number of Units}}$$

It is important to note at this juncture that process costing, output costing and operating costing are all sub-divisions of Unit Costing method.

2.2.1.2 Features of Job Costing:

Job Costing functions on the premise that each job is unique; and hence it will have its own unique/different cost. Thus, when jobs are undertaken for execution they are given their own identification number to facilitate cost collection and compilation. This identification number finds its place on each requisition slip for material, job card for expending labour and all other documents specifying special/direct needs of a job. As far as Overheads are concerned these are charged as per the practice of the organization as a percentage of prime cost, or on labour hour basis etc. An important element of Job costing is the comparison of the estimated cost with the actual cost; so as to know the variance and ensure proper control over costs. The special features relating to production and cost ascertainment in industries where job costing can be applied are:

1. Each job is unique, specific and dissimilar.

2. Each job is undertaken to customer's special requirements and not for stock.
3. Each job is comparatively of a short duration.
4. Each job is capable of identification at all stages of production.
5. Each job order is separately identified by a job order number.
6. There is no uniformity in the flow of production from department to department.
7. Direct costs of labour, materials and expenses are booked directly against the job order.
8. Overheads are charged on the basis of predetermined rates.

2.2.1.3 Practical Applications of Job Costing and Unit Costing:

Job cost accounting is followed in three types of manufacturing organisations:

- (i) Jobbing concerns.
- (ii) Small firms.
- (iii) Large enterprises manufacturing a variety of products.

(i) Jobbing concerns:

Some concerns manufacture a variety of products according to customer's specifications and do not generally confine their activities to producing uniformly any specific product for sale in the market. The jobs, products or services are dissimilar or unique and non-repetitive having different specifications and methods of manufacture, and each one requires different types, sizes and quantities of materials and equipment's and utilizes different labour hours. Such concerns must of necessity use job cost accounting.

(ii) Small firms:

Though manufacturing a number of specific products, small manufacturing concerns may find process costing difficult to apply because due to small sales, no product can have a run long enough to establish a product line. On account of the frequent changes from one product to another, job costing would be suitable for determining the cost of each lot of products.

(iii) Large enterprises manufacturing a variety of products:

A single department would be manufacturing several products, perhaps all at a time, so that none of the departments is specialized for continuous runs of product lines. As definite process departments cannot be established, job costing is more suitable in such cases.

Job costing is applicable to engineering concerns, construction companies, ship-building, furniture making, hardware and machine manufacturing industries, repair shops, automobile garages and several such other industries where jobs or orders can be kept separate.

2.2.1.4 Preparation of Job Cost Sheet:

On receipt of an order from the customer or an indication from the sales department for manufacturing a particular product, the production planning department prepares a suitable design for the product or job. It also works out the requirements of materials for the product and prepares a list of operations indicating the various operations to be carried out and their sequence, and the shops, departments, plants or machines to be entrusted with each of the operations.

A Production Order is issued giving instructions to the shops to proceed with the manufacture of the product. The production order constitutes the authority for work. Usually a production order contains all relevant information regarding production, such as detailed particulars of the job or product, the quantity or units to be manufactured, date of start of production, probable date of completion, details of materials required as per the bill of materials, the operations and the various shops involved in performing them and the route that the job should take.

The production order usually lays down only the quantities of materials required and the time allowed for the operations, but the values of materials and labour are also sometimes indicated. In the latter case, the production order serves the combined purpose of an order for manufacture as well as the cost sheet on which the cost of the order is compiled.

The production order also provides for the material and labour on account of normal wastage or spoilage of the product in the final stage or during the various stages of manufacture.

➤ Production orders may, in general, be of three types:

- (i) Assembly type of order.
- (ii) Sub-assembly type of order.
- (iii) Components or parts production type.

(i) Assembly type of order:

Where components are purchased and assembled into a product in the factory. A production order for assembly only is required.

(ii) Sub-assembly type of order:

Components are purchased and sub-assemblies and assemblies are made in the factory. Production orders for each sub-assembly and final assembly will be necessary.

(iii) Components or parts production type:

Components are manufactured and sub-assembled and the sub-assemblies are assembled into the final product. Separate production orders for each component, sub-assembly and final assembly are issued.

➤ **Copies of Production Orders May be Distributed as Follows:**

- (a) One copy to the stores for provisioning and issue of materials on demand.
- (b) One copy each to the departments or shops concerned to undertake production by demanding materials and employing men and machines on the operations.
- (c) One copy to the cost department for working out the cost of the job.

Separate job cost sheets are maintained for each job. If a job consists of several major or important operations, separate cost sub-sheets for recording the costs of the various operations may be maintained and the aggregate cost, in summary, shown in the main cost sheet.

• **Material Cost:**

On receipt of a production order, the shop draws the requisite materials from the stores. Surplus, excess or incorrect materials are returned from the shops to the stores on materials return notes. Scrap and waste arising in the course of manufacture are returned in a similar manner. The materials requisitions, materials return notes and materials transfer notes are 'evaluated' in accordance with the methods of pricing adopted by the concern.

- **Labour Cost:**

Labour summaries or wages analysis sheets are prepared for each accounting period and the totals of these statements are debited to Work-in-Progress Account or Overhead Control Account by credit to Wages Control Account. Amounts on account of overtime, idle time, shift differential and fringe benefits may also be included in the wages analysis sheet. Direct labour costs are posted on the respective cost sheets and indirect labour is treated in the manner indicated for indirect material.

- **Manufacturing Overhead:**

Overhead costs are accumulated against standing order numbers and against cost centres. Overhead rates, predetermined or actual as the case may be, are worked out for each such centre. The overhead applied to each job is obtained by multiplying the overhead rate by the actual base variable spent on the job.

Completion of Jobs:

Postings of direct material, direct labour, direct expenses and manufacturing overhead costs to the cost sheet for a job or production order are made periodically throughout the run of the job or order. The completion report is an indication that the manufacturing operations are over and further expenditure on the job should cease so that the cost sheet may be closed.

➤ **Work-in-Progress:**

The cost of an incomplete job i.e., a job on which some manufacturing processes or operations are still due before it can be made into the finished product is termed Work-in-Progress or Work-in-Process. If a production order has been only partly completed by the end of an accounting period, it is essential that the closing stock of the work-in-progress be determined.

➤ **Limitations of Job Costing:**

The limitations of job costing are:

- (a) Job costing is comparatively more expensive as more clerical work is involved in identifying each element of cost with specific departments and jobs.
- (b) With the increase in the clerical processes, chances of errors are enhanced.
- (c) The cost as ascertained, even where they are compiled very promptly, are historical as they are compiled after incidence.

- (d) The cost compiled under job costing system represents the cost incurred under actual conditions of operation. The system does not have any scientific basis.

➤ **Reports in Job Costing System:**

Report on profits on completed jobs:

A statement may be prepared monthly to indicate the gross profit earned on all jobs completed during the month. This statement is useful for the management for evaluating past performances. Net profit analysis may also be made in a similar manner if administration, selling and distribution overheads for the job are included in the statement.

➤ **Report on cost variances:**

If cost estimates are developed, a cost variance report showing the deviations of actual costs from the estimated costs may be prepared in order that significant differences may be brought to light and investigated. The report may be prepared separately for a job, or for a department showing the variances in respect of all jobs undertaken by the department during a period.

➤ **Illustrations:**

Illustration 1:

As a newly appointed Cost Accountant, you find that the selling price of Job No. 9669 has been calculated on the following basis:

Particulars	₹
Materials	12.08
Direct Wages – 22 hours at 25 paise per hour	5.50
Department:	
A – 10 hours,	
B – 4 hours	
C - 8 hours	
	17.58
Plus 33% on Prime Cost	5.86
	23.44

An analysis of the previous year's profit and loss account shows the following:

Particulars	₹	Particulars	₹
Materials Used	77,500	Factor y Overheads:	
Direct Wages:		A	2,500
A	5,000	B	4,000
B	6,000	C	1,000
C	4,000	Selling Cost	30,000

You are required to:

- Draw up a Job Cost Sheet;
- Calculate and enter the revised costs using the previous year's figures as a basis.
- Add to the total job cost 10% for profit and give the final selling price.

Solution:

In order to draw up a Job Cost Sheet; the factory overhead rates of different departments and percentage of selling cost will have to be determined first on the basis of the previous year's figures as follows;

Factory Overhead Rates:

Particulars	Department		
	A	B	C
	₹	₹	₹
Factory Overheads	2,500	4,000	1,000
Direct Labour Hours (D.W.* 4)	20,000	24,000	16,000
Factory Overhead Rates Per Hour	0.125	0.167	0.063

$$\text{Percentage of Selling Cost to Works Cost} = \frac{\text{Rs.30000}}{\text{Rs.1,00,000}} * 100 = 30\%.$$

Cost Sheet:

Job No.0007

Period

Particulars		₹
Material		12.08
Direct Wages:		
Dept. A	2.50	
Dept. B	1.00	
Dept. C	2.00	5.50
		17.58
Factory Overheads:		
Dept. A (10 hrs.@ Rs.0.125phr.)	1.25	
Dept.B (4 hrs.@ Rs.0.167 phr.)	0.67	
Dept.C (8 hrs.@ Rs.0.063 phr.)	0.50	2.42
Works Cost		20.00
Selling Cost (30% of Works Cost)		6.00
Cost Of Sales		26.00
Profit (10% on Cost)		2.60
SELLING PRICE		28.60

Illustration 2 : Raghav Manufacturing Co. Ltd. receives an enquiry for the supply of 20,000 units of its products.

The costs are estimated as follows:

Raw Materials 1,00,000 Kgs @ ₹ 2 per kg.

Direct Wages 10,000 hours @ ₹ 8 per hour

Variable Overheads :

Factory ₹ 4.80 per labour hour

Selling & Distribution ₹ 32,000

Fixed Overheads :

Factory ₹ 12,000

Office & Administration ₹ 1,00,000

Selling & Distribution ₹ 28,000

The company adds 20% to its cost as its margin of profit. Prepare a Statement of quotation showing the price to be quoted.

Solution:

Statement of Quotation Showing the Price to be Quoted per unit and for 20,000 Units

Particular	Total ₹	Per Unit ₹
Estimated Cost of Direct Materials	2,00,000	10.00
Estimated Cost of Direct Labour	80,000	4.00
Estimated Prime Cost	2,80,000	14.00
Add: Estimated Factory Overheads		
Variable 48,000		
Fixed 12,000	60,000	3.00
Estimated Factory Cost	3,40,000	17.00
Add: Estimated Office & Administrative Overheads	1,00,000	5.00
Estimated Cost of Production	4,40,000	22.00
Add: Estimated Selling & Distribution Overheads		
Variable 32,000		
Fixed 28,000	60,000	3.00
Estimated Cost of Sale	5,00,000	25.00
Add : Desired Profit @ 20% on Cost Price	1,00,000	5.00
Estimated Selling Price	6,00,000	30.00

Illustration 3:

Work out in Cost Sheet form the unit cost of production per ton of Special Paper manufactured by a paper mill in March, 2022 from the following data:

Direct Materials

Paper Pulp 500 tons @ ₹ 50 per ton

Other Materials 100 tons @ ₹ 30 per ton

Direct Labour

80 Skilled men @ ₹ 3 per day for 25 days

40 Unskilled men @ ₹ 2 per day for 25 days

Direct Expenses

Special Equipment ₹3,000

Special Dyes ₹ 1,000

Works Overheads

Variable @ 100% and Fixed @ 60% on Direct Wages

Administrative Overheads @ 10%

Selling and Distribution Overheads @ 15% on Works Cost

Forty tons of special paper was manufactured and Rs. 800 was realised by the sale of waste material during the course of manufacture. The scrap value of the special equipment after utilisation in manufacture is nil.

Cost Sheet of a Paper Mill for the Month of March, 2018

Output : 400 Ton

Particular	Cost ₹	Total Cost ₹	Cost per Ton ₹
Cost of Direct Materials used			
Paper Pulp = 500 @ ₹ 50	25,000		

Other Materials = 100 @ ₹ 30	3,000		
	28,000		
Less: Sale of Waste Materials	800	27,200	68.00
Cost of Direct Labour			
Skilled Men = 80 × ₹ 3 × 25	6,000		
Unskilled Men = 40 × ₹ 2 × 25	2,000	8,000	20.00
Cost of Direct Expenses			
Special Equipment	3,000		
Special Dyes	1,000	4,000	10.00
Prime Cost		39,200	98
Works Overheads			
Variable (100% on direct wages)	8,000		
Fixed (60% on direct wages)	4,800	12,800	32.00
Works Cost		52,000	130.00
Administrative or Overheads (10% on Work Cost)		5,200	13.00
Cost of Production		57,200	143.00
Selling & Distribution Overheads (15% on Works Cost)		7,800	19.50
Cost of Sales		65,000	162.50

Illustration 4:

The data pertaining to Highfi Fabricators Ltd. using job costing technique; are as under at the end of 31-03-2022. Direct Materials ₹9,00,000; Direct Labour ₹7,50,000; Selling Overheads ₹5,25,000; Administration Overheads ₹4,20,000; Factory Overheads ₹4,50,000 & Profit ₹6,09,000.

From the above prepare:

- (a) A Cost Sheet showing all the relevant details; and
- (b) For the next year i.e. 2022-23; the factory has received a work order. It is estimated that the direct materials would amount to ₹12,00,000 and direct labour ₹7,50,000. You are requested to price the work order; if the factory desires to earn the same % of profit to sales as last year. However; the selling overheads have increased by 15%; the factory recovers factory overheads as a % to direct wages; and administration & selling overheads as a % of the works cost, considering the cost details of the previous year.

Solution:**(a) Cost Sheet for 2022-23:**

Particulars	₹
Direct Materials	9,00,000
Direct Labour	7,50,000
Prime Cost	16,50,000
Factory Overheads (60% of Direct Labour)	4,50,000
Works Cost	21,00,000
Administration Overheads (20% of works cost)	4,20,000
Cost of Production (Office)	25,20,000
Selling Overheads (25% of works cost)	5,25,000
Cost of Sales	30,45,000
Profit (20% or 1/5 of Cost of Sales)	6,09,000
SALES.	36,54,000

(b) Estimated Price of the Work Order (2022-23)

Particulars	₹
Direct Materials	12,00,000
Direct Labour	7,50,000
Prime Cost	19,50,000
Factory Overheads (60% of Direct Labour)	4,50,000
Works Cost	24,00,000
Administration Overheads (20% of works cost)	4,80,000
Cost of Production (Office)	28,80,000
Selling Overheads (40% i.e.(25+15)% of works cost)	9,60,000
Cost of Sales	38,40,000
Profit (20% or 1/5 of Cost of Sales)	7,68,000
SALES.	46,08,000

Illustration No. 5: The following information for the year ended December 31, 2022 is obtained from the books and records of a job order factory:

	Completed jobs ₹	Work-in-progress ₹
Raw Materials supplied from stores	90,000	30,000
Wages	1,00,000	40,000
Chargeable Expenses	10,000	4,000
Materials transferred to work-in-progress	2,000	2,000
Materials returned to stores	1,000	--

Factory Overheads are 80% of wages and office overheads are 25% of Factory Cost. The price of the executed Contracts during 2022 was ₹ 4,10,000. Prepare (i) Consolidated Completed Jobs Account showing the profit made or loss incurred, and also Consolidated Work-in-progress Account.

Solution :

Consolidated Completed Jobs Account for the Year ending 31-12-2022

Dr.

Cr.

		₹		₹
To Materials	90,000		By Sales	4,10,000
Less Transfer to W.I.P. 2,000				
Returned to stores <u>1,000</u>	3,000	87,000		
To Wages		1,00,000		
To Chargeable Expenses		10,000		
PRIME COST		1,97,000		
To Factory Overheads		80,000		
(80% of wages)				
FACTORY COST		2,77,000		
To Office Overheads		69,250		
(25% of factory cost)				
COST OF PRODUCTION		3,46,250		
To Net Profit		63,750		
		4,10,000		4,10,000

Consolidated Work-in-progress accounting for the year ending 31-12-2022

Dr.

Cr.

		₹		₹
To Materials	30,000		By Balance c/d	1,35,000
Add : Transfer to W.I.P.	<u>2,000</u>	32,000		
To Wages		40,000		
To Chargeable Expenses		4,000		
PRIME COST		76,000		
To Factory Overheads		32,000		

(80% of wages)			
FACTORY COST	1,08,000		
To Office Overheads	27,000		
(25% of factory cost)			
COST OF PRODUCTION	1,35,000		
To Balance b/d	1,35,000		

Illustration 6

As newly appointed Cost Accountant, you find that the selling price of Job No. 9669 has been calculated on the following basis:

Particulars	₹
Materials	12.08
Direct Wages - 22 hours at 25 paise per hour	5.50
Department A - 10 hours.	
B - 4 hours	
C - 8 hours	
	17.58
Plus 33% on Prime Cost	5.86
	23.44

An analysis of the previous year's profit and loss account shows the following:

Particulars	₹	Particulars	₹
Materials Used	77,500	Factory Overheads:	
Direct Wages		A	2,500
A	5,000	B	4,000
B	6,000	C	1,000
C	4,000	Selling Costs	30,000

You are required to :

- Draw up a Job Cost Sheet
- Calculate and enter the revised costs using the previous year's figures as a basis:

(C) Add to the total job cost 10% for profit and gives the final selling price.

Solution :

In order to draw up Job Cost Sheet, the factory overhead rates of different departments and percentage of selling cost will have to be determined first on the basis of previous year's figures as follow:

Factory Overhead Rates :

Particular	Department		
	A	B	C
	₹	₹	₹
Factory Overheads	2,500	4,000	1,000
Direct Labour Hours (D.W. x 4)	20,000	24,000	16,000
Factory Overheads Rates per hour	0.125	0.167	0.063

$$\text{Percentage of Selling Cost on Works Cost} = \frac{\text{₹ } 30,000}{\text{₹ } 1,00,000} \times 100 = 30\%$$

Cost Sheet

Job No. 9669		Period
Particulars		₹
Material		12.08
Direct Wages:		
Dept. A	2.50	
Dept. B	1.00	
Dept. C	2.00	5.50
Prime Cost		17.58
Factory Overheads :		
Dept. A (10 hours. @ ₹0.125)	1.25	
Dept. B (4 hours. @ 0.167)	0.67	
Dept. C (8 hours. @ 0.063)	0.50	2.42
Works Cost		20.00

Selling Cost (30%) of Works Cost)		6.00
Cost of Sales		26.00
Profit (10% on Cost)		2.60
Selling Price		28.60

Illustration 7

A work order for 100 units of a commodity has to pass through four different machines of which the machine hour rates are: Machine P - ₹ 1.25, Machine Q - ₹ 2.50, Machine R - ₹ 3 and Machine S - ₹ 2.25 Following expenses have been incurred on the work order - Materials ₹ 8,000 and Wages ₹ 500.

Machine - P has been engaged for 200 hours. Machine - Q for 160 hours, Machine - R for 240 hours and Machine - S for 132 hours.

After the work order has been completed, materials worth ₹ 400 are found to be surplus and are returned to stores.

Office overhead used to be 40% of works costs, but on account of all-round rise in the cost of administration, distribution and sale, there has been a 50% rise in the office overhead expenditure.

Moreover, it is known that 10% of production will have to be scrapped as not being upto the specification and the sale proceeds of the scrapped output will be only 5% of the cost of sale.

If the manufacturer wants to make a profit of 20% on the total cost of the work order, find out the selling price of a unit of commodity ready for sale.

Solution :

Statement showing the selling price of a unit

Particulars		₹
Materials used (₹8,000- ₹400)		7,600
Direct Wages		500
Prime Cost		8,100
Works Overhead at machine hour rate :		

Machine – P For 200 hours @ ₹ 1.25 per hour	250	
Machine – Q For 160 hours. @ ₹ 2.50 per hour	400	
Machine – R For 240 hours. @ ₹ 3 per hour	720	
Machine – S For 132 hours. @ ₹ 2.25 per hour	297	1,667
Works Cost		9,767
		15,627
Less : Sales proceeds of Scrap (5% of 10% of ₹15,627)		78
Total Cost of the work order		15,549
Profit at 20% of total Cost		3,110
Selling Price of 100 units		18,659
Selling Price of a unit		186.59

Note : It was known before that 10% of production will have to be scraped, therefore, inputs must have been made taking this factor into consideration. No other adjustments is necessary except deducting the value of scrap from the cost of production.

Illustration 8:

The data pertaining to Heavy Engineering Ltd. using are as follows at the end of 31.3.2017. Direct material ₹ 9,00,000; Direct wages ₹ 7,50,000; Selling and distribution overhead ₹ 5,25,000; Administrative overhead ₹ 4,20,000, Factory overhead ₹ 4,50,000 and Profit ₹ 6,09,000.

- Prepare a cost sheet showing all the details.
- For 2012-13, the factory has received a work order.

It is estimated that the direct materials would be ₹ 12,00,000 and direct labour cost ₹ 7,50,000. What would be the price of work order if the factory intends to earn the same rate of profit on sales, assuming that the selling and distribution overhead has gone up by 15%? The factory recovers factory overhead as a percentage of direct wages and administrative and selling and distribution overheads as a percentage of works cost, based on the cost rates prevalent in the previous year.

Solution 8:**Statement of cost and profit**

Particulars	₹
Direct Materials	9,00,000
Direct Wages	7,50,000
Prime Cost	16,50,000
Factory Overheads (60% of wages)	4,50,000
Works Cost	21,00,000
Administration Overhead (20% of works cost)	4,20,000
Cost of Production	25,20,000
Selling & Distribution Overheads (25% of Works Cost)	5,25,000
Cost of Sales	30,45,000
Profit (1/5 of Cost)	6,09,000
Sales	36,54,000

Estimated Price of work order

Particulars	₹
Direct Materials	12,00,000
Direct Wages (or labour)	7,50,000
Prime Cost	19,50,000
Factory Overheads (60% of wages)	4,50,000
Works Cost	24,00,000
Administration Overhead (20% of works cost)	4,80,000
Cost of Production	28,80,000
Selling & Distribution Overheads (40% i.e. 25% + 15% of Works Cost)	9,60,000
Total Cost	38,40,000
Profit (1/5 of Total Cost)	7,68,000
Estimated Sales Price	46,08,000

Illustration 9

A manufacturing company is divided into three production departments – A, B and C. All production is to customers' orders. All orders are dissimilar and they go through all the three departments.

Manufacturing Costs for a given period were as follows:

Particulars	Dept. A	Dept. B	Dept. C	Total
	₹	₹	₹	₹
Direct material				1,80,000
Direct labour	40,000	20,000	30,000	90,000
Indirect manufacturing costs	20,000	40,000	30,000	90,000

The cost of producing a particular order was determined as follows:

Particulars	₹	₹
Direct material		1,000
Direct Labour :		
Department A	120	
Department B	280	
Department C	200	600
Indirect manufacturing Costs		600
		2,200

The General Manager had a hazy Idea that the jobs executed on orders of this nature are under-priced. So, the services of a firm of cost accountants, of which you are a member, have been acquired for a through investigation.

Can you detect, after a careful perusal of the limited available information, the fundamental fallacy of the company's method assuming that the direct labour cost is an acceptable basis for distributing indirect manufacturing costs?

Prepare a revised cost for order distributing indirect manufacturing costs in a manner you consider more correct than the company's procedure.

Solution :

The predominant fault is the adoption of a blanket rate for the distribution of the indirect manufacturing costs for all the three department, i.e., 100% of total direct labour cost. This has been done despite of the fact that there are glaring differences of the direct labour cost of three departments. For calculating the revised cost of jobs, departmental rates based on indirect manufacturing cost percentage to direct labour costs are calculated:

Particular	Department		
	A	B	C
	₹	₹	₹
Indirect Mfg. Cost (₹)	20,000	40,000	30,000
Direct Labour (₹)	40,000	20,000	30,000
% of Mfg. Cost to Labour Cost $(1/2) \times 100$	50%	200%	100%

On the assumption that direct labour cost method is considered to be a reasonable method of absorption of overheads, it is quite possible that departmental application of overhead may be able to resolve the difficulty faced by the manager regarding the costing of the job given. On this basis the amended job cost sheet will be as under:

Revised Cost of Job

Job No. 9669		Period
Particulars		₹
Direct Material (Given)		1,000
Direct Wages:		
Dept. A	120	
Dept. B	280	
Dept. C	200	600
		1,600
Indirect Manufacturing Cost :		
(Revised)		
Dept. A	50% of Direct Labour	60
Dept. B	200% of Direct Labour	560

Dept. C	100% of Direct Labour	200	820
Total Cost			2,420

Illustration 10

In an automobile factory, various jobs are undertaken in the premises in two departments. The following information is related to the cost incurred on Job No. 103:

Solution:

Material consumed	₹6,830
Wages :	
Department A	100 hours @ ₹ 2.0 per hour
Department B	50 hours @ ₹ 3.0 per hour
Overheads incurred were as follows :	
Variable Overheads :	
Department A :	₹ 3000 for 2000 direct labour hours
Department B :	₹ 5000 for 2500 direct labour hours

Prepare job cost sheet for Job No. 103. Also estimate the profit earned on the job if the price quoted was ₹ 10,250.

Solution :

Cost Sheet Job No. 103

Particulars	Amount ₹	Amount ₹
Direct Materials	6,830	
Direct Wages :		
Department A (100 hours @ 2.00 per hour)	200	
Department B (50 hours @ 3.00 per hour)	150	
Prime Cost		7,180
Overheads :		
Variable :		

Deptt. A	$\frac{3,000}{2,000} \times 100$	150	
Deptt. A	$\frac{5,000}{2,500} \times 50$	100	250
Fixed :	$\frac{6,500}{10,000} \times 50$		
Total Cost			7,528
Profit			2,722

➤ **Check Your Progress:**

A. Multiple Choice Questions:

- Job costing is used in
 - Furniture making
 - Repair shops
 - Printing press
 - All of the above
- In a job cost system, costs are accumulated
 - On a monthly basis
 - By specific job
 - By department or process
 - By kind of material used
- The most suitable cost system where the products differ in type of material and work performed is
 - Operating Costing
 - Job costing
 - Process costing
 - All of these.
- Cost Price is not fixed in case of
 - Cost plus contracts
 - Escalation clause
 - De-escalation clause
 - All of the above
- Most of the expenses are direct in
 - Job costing
 - Batch costing
 - Contact costing
 - None of the above

B. State whether the following statements are True or False:

1. Job costing is applied only in small concerns.
2. For every Job; the cost is different.
3. Target Costing is used for the purpose of control of Job Costs.
4. Motor Garages used Contract Costing for cost determination.
5. The cost of all Jobs is same.

C. Fill in the Blanks:

1. For different _____; the cost is different.
2. The concept of Cost-Plus Contracts is used in _____ Costing.
3. Repair Workshops use _____ Costing system.
4. _____ of cost is an important activity in Job Costing.
5. To identify costs, all _____ are given an unique identification number.

D. Match the following:

Column A		Column B	
1.	Job Costing	a.	Target Costing
2.	Controlling Job Costs.	b.	Automobile garages
3.	Calculation of Job Cost.	c.	Job costing
4.	Job costing is used in	d.	Different Costs.
5.	Under job order cost system, each job is assigned a number for identifying jobs.	e.	Unique Job Number.

2.3 Summary:

From the overall discussion it is understood that a Job refers to any specific assignment, the output of the job generally consists of one unit or a manageable number of units. Ascertainment of cost of each Job is called Job Costing. Job Costing is an attempt to calculate the cost of non-standard, non-routine jobs. It is understood

that the method for estimating costs when work is done on a small scale and is tailored to the demands of the client is called job costing. As a result, this method is used for tasks like building furniture, printing, painting, and vehicle repairs. In this method, each task is treated as a separate cost unit, and the cost and profit of each job are determined using a task Cost Sheet. The work cost sheet may also be used to estimate a job's cost and provide a quote for it. It is understood that the Output costing is another name for it. It is primarily utilised for producing single items or items that are comparable. For the costing of coal, brick, oil, drilling, etc., this approach is employed. In industries that produce homogenous, similar goods in large quantities, unit costing is a common way of costing. This approach of costing is used in several sectors, including brickmaking, collieries, quarries, autos, and electronics etc. The definition of unit cost, its importance, calculation, and benefits and drawbacks have all been covered in the sections above. An organization's profit is greatly influenced by unit cost. The amount a company pays to produce, store, and sell one unit of a good or service is known as the unit cost. Both the cost of sales and the cost of products sold apply to them. Thus, it is stated that the unit cost and job cost helps to ascertain the cost of particular job or unit.

2.4 Terms to Remember:

- **Job Costing:** Specific order costing involving accumulation of costs relating to a single cost unit-the 'job' - when each order is of comparatively short duration. It is also called job order costing.
- **Job Cost Sheet:** A statement showing cost and profit relating to a specific job a batch or a contract.
- **Production Order:** A document prepared by the Planning Department authorising and stipulating the details of the work to be done on the job undertaken.
- **Unit Cost:** A unit cost is a total expenditure incurred by a company to produce, store, and sell one unit of a particular product or service.
- **Cost of Sales:** Total of cost of production of goods sold and selling and distribution overheads.
- **Work-in-Progress:** Semi-finished goods.

2.5 Answers to Check Your Progress:

- A. Ans: d, b, b, a, c
- B. Ans: 1. False, 2. True, 3. True, 4. False, 5. False
- C. Ans: 1. Jobs, 2. Job, 3. Job, 4. Estimation, 4. Jobs
- D. Ans: 1-D, 2-A, 3-E, 4-B, 5-C.

2.6 Exercise:

1. Define Unit Costing. Mention the industries to which this method of costing is applicable.
2. Define Job Costing and describe its essential features.
3. What is job costing? Explain the objectives of job costing.
4. What is job costing? Enumerate the objectives, features, advantages and disadvantages of job order costing system.
5. Write short notes on:
 1. Define Unit Costing
 2. Components of Total Cost
 3. Application of Unit Costing
 4. Features of Job Costing
 5. Use of a production order
6. Prepare a Cost Sheet from the following data to find out profit and cost per unit :

	₹
Raw Materials consumed	₹ 1,60,000
Direct Wages	₹ 80,000
Factory Overheads	20% of Direct Wages
Administrative Overheads	10% of Factory Cost
Selling Overheads	₹ 12,000
Units produced	4,000

Units sold ₹ 100 per unit

Selling Price ₹ 100 per unit

(**Answer:** Prime Cost: ₹ 2,40,000; Factory Cost: ₹ 2,56,000; Cost of production of goods produced : ₹ 2,81,600; Cost of Sales: ₹ 2,65,440; and Profit : ₹ 94,560)

7. You are the chief of the Cost Accounting Department of Leather Products Kolhapur Ltd. Your organisation manufactures shoes. The following figures have been extracted from the account books relating to the production of shoes for the year 2021.

	₹
Raw Materials consumed (including abnormal wastage of ₹ 10,000)	5,10,000
Direct Wages paid	4,00,000
Factory Overheads	1,00,000
Tools consumed	10,000
Depreciation of Machines (Factory)	5,000
Machines imported	1,00,000
Work Expenses (Misc.)	50,000
Office Expenses	25,000
Overheads for Office	40,000
Managing Director's Salary	50,000
Stationery & Printing (Office)	5,000
Depreciation of Machines (Office)	1,000
Selling and Distribution Expenses	25,000
Entertainment of customers	20,000
Advertising	30,000
Dividend paid	1,00,000

Hint: Abnormal wastage of raw materials should be treated separately and as such, it should not form part of cost.

(Answer: Cost of raw materials consumed; ₹ 5,00,000, Cost of direct labour: ₹ 4,25,000; Prime Cost: ₹ 9,25,000; Factory Overheads :

₹1,65,000 Factory Cost: ₹ 10,90,000; Administrative Overheads : ₹ 1,21,000; Cost of production of goods produced : ₹ 12,11,000; Selling & Distribution Overheads: ₹ 75,000; Cost of Sales : ₹ 12,86,000; Profit: ₹ 3,21,500 & Sales: ₹16,07,500)

8. A work order for 100 units of a commodity has to pass through four different machines of which the machine hour rates are: Machine P – ₹ 1.25, Machine Q – ₹ 2.50, Machine R – ₹ 3 and Machine S – Rs. 2.25 Following expenses have been incurred on the work order – Materials ₹ 8,000 and Wages ₹ 500. Machine - P has been engaged for 200 hours. Machine - Q for 160 hours, Machine - R for 240 hours and Machine - S for 132 hours. After the work order has been completed, materials worth ₹ 400 are found to be surplus and are returned to stores. Office overhead used to be 40% of works costs, but on account of all-round rise in the cost of administration, distribution and sale, there has been a 50% rise in the office overhead expenditure. Moreover, it is known that 10% of production will have to be scrapped as not being upto the specification and the sale proceeds of the scrapped output will be only 5% of the cost of sale. If the manufacturer wants to make a profit of 20% on the total cost of the work order, find out the selling price of a unit of commodity ready for sale.
9. The data pertaining to Heavy Engineering Ltd. using are as follows at the end of 31.3.2017. Direct material ₹9,00,000; Direct wages ₹ 7,50,000; Selling and distribution overhead ₹ 5,25,000; Administrative overhead ₹ 4,20,000, Factory overhead ₹ 4,50,000 and Profit ₹ 6,09,000. (a) Prepare a cost sheet showing all the details. (b) For 2012-13, the factory has received a work order. It is estimated that the direct materials would be ₹ 12,00,000 and direct labour cost ₹ 7,50,000. What would be the price of work order if the factory intends to earn the same rate of profit on sales, assuming that the selling and distribution overhead has gone up by 15%? The factory recovers factory overhead as a percentage of direct wages and administrative and selling and distribution overheads as a percentage of works cost, based on the cost rates prevalent in the previous year.
10. The following direct costs were incurred on Job No. 551 of standard Radio Company:

Materials 4,010

Wages:

Deptt. A-60 hours @ ₹ 3 per hour

Deptt. B-40 hours @ ₹ 2 per hour

Deptt. C-20 hours @ ₹ 5 per hour

Overheads expenses for these three departments were estimated as follows:

Variable Overheads:

Deptt. A ₹ 5000 for 5,000 labour hours

Deptt B ₹ 3000 for 1,500 labour hours

Deptt C ₹ 2,000 for 500 labour hours

Fixed overheads: Estimated at ₹ 20,000 for 10,000 normal working hours. to earn profit of 25% on selling price.

(Answer : Total Cost : ₹ 4,830; Sales Price: ₹ 6,440)

11. ABC Company is engaged in job work. It has completed all jobs in hand except Job No.49 on December 30, 2022. The cost sheet on December 30 showed direct material and direct labour costs of ₹ 45,000 and ₹ 35,000 respectively as having been incurred on Job No. 49. The costs incurred by the business on 31st December, 2022. the last day of the accounting year, were as follows:

	₹
Direct Materials (Job 49)	3,000
Direct Labour (Job 49)	9,000
Indirect Labour	3,000
Miscellaneous Factory Overheads	4,000

It is the practice of business to charge factory overheads to the jobs on the basis of 120 per cent of direct labour cost. Calculate the cost of work-in progress of Job No. 49 on 31st December, 2022.

(Answer: ₹ 1,25,600)

Hints: The cost of indirect labour and miscellaneous factory overheads is not to be included, as the factory overheads have been included on the basis of recovery rate.

2.7 References for Further Study:

1. Khan and Jain (2007). Cost Accounting, New Delhi: India, Tata McGraw hill. 2nd edition, ISBN: 0-07-0440224-8, pp -1.1-1.8
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Unit-3

Process Costing

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3.0 Objectives:

After studying this unit, students will be able:

1. To know the meaning of Process Costing and its importance.
2. To understand the accounting procedure of process costing including normal loss and abnormal loss (or) gain.

3.1 Introduction:

Process costing is used when there is mass production of similar products, where the costs associated with individual units of output cannot be differentiated from each other. In other words, the cost of each product produced is assumed to be the same as the cost of every other product. Process Costing refers to a method of accumulating cost of production by process. It represents a method of cost procedure applicable to continuous or mass production industries producing standard products. Costs are compiled for each process or department by preparing a separate account for each process. Process costing can be applied in chemical works, oil refining, food manufacturing, paint works, canning, textiles, paper, dairy, sugar, bakeries, breweries, mining industries, public utility services etc. When a product is manufactured through various processes, the output of each process is transferred to the subsequent process and that of the last process is transferred to the finished stock. Process Costing is an attempt to arrive at the cost of products which by the very nature of the material and the consequent activity involved are required to pass through various stages called as processes before the final product emerges. Here the cost units involved are homogeneous and hence costs are identical. In view of this Process Costing is said to be applying the basic principles of Unit Costing. Since Processes involve losses and there can be a situation when part of the input may be under process; special adjustments/treatment is required to be given in order to arrive at the cost of the cost units.

3.2 Presentation of Subject Matter:

3.2.1 Process Costing:

Process costing refers to costing of one or more processes involved while converting a raw material into finished output. Process costing is usually employed in paint works, chemical plants, food manufacturing, oil refining, paper mills, textile mills, canning, dairy etc. this method is applied where it is not possible to trace the items of prime cost to a particular order, because its identity is lost in the volume of continuous production. In oil refining factory, for example we cannot trace the prime cost of a specific order for, say, 200 liters of refined oil where thousands of liters of oil are being produced at the same time. Accordingly, the procedure would be to divide the cost of production during a certain period by the total number of liters produced during the period in order to ascertain the cost per liter of oil.

In deciding the costing system to be adopted in an industry, consideration must be given to the nature of industry, the method of production and the nature and variety of goods produced. In general job costing is suitable where the goods are made to customers' orders, production is intermittent and customers' orders can be identified in the volume of production. On the other hand, process costing is suitably employed where goods are made for stock and production is continuous, or goods although made to customers order are owing to continuous nature of production, lost sight of in the volume of production.

The fundamental principles of process costing are:

- (a) cost of materials, wages and expenses are collected for each operation or process in a period.
- (b) Adequate records are kept in respect of output and scrap of each operation or process during the period.
- (c) The cost per finished output of each process is obtained by dividing the total cost incurred during a period by the number of units produced during that period after giving due regard to losses and amount recovered from scrap.
- (d) As products pass from one process to another the accumulated cost of output of a process is transferred to the next process just like raw materials of that process.
- (e) Computation of process cost on the basis the above fundamental principles is easy where there is neither any WIP at various stages of completion nor any process loss. However, existence of WIP & process loss is very common & as a result of which the problems met by a cost accountant in relation to process costing are –
- (f) Normal & abnormal process losses or gains.
- (g) Opening & closing WIP at various stages of completion as regards material, labour & overhead. Moreover, there may be process losses or gains.
- (h) Inter process profits.

3.2.1.1 Meaning and Definition:

Process costing is that aspect of operation costing which is used to ascertain the cost of the product at each process or stage of manufacture. This method of accounting used in industries where the process of manufacture is divided into two or

more processes. The objective is to find out the total cost of the process and the unit cost of the process for each and every process. Usually, the industries where process costing used are textile, oil industries, cement, pharmaceutical etc.

3.2.1.2 Application of Process Costing:

Process Costing principles are applied in all those industries where the raw material is required to pass through various processes before the final/finished product comes into being. Thus, gainful employment of Process Costing is observed in Oil Refineries, Sugar Factories, Chemical Manufacturing Units, Fertilizer Plants, Pharmaceutical Units etc.

3.2.1.3 Concept of Equivalent Production:

This represents the production of a process in terms of completed units. In other words, it means converting the incomplete production units into its equivalent of complete units. In each process an estimate is made of the percentage completion of any work-in-progress. A production schedule and a cost schedule will then be prepared. The work-in-progress is inspected and an estimate is made of the degree of completion, usually on a percentage basis. It is most important that this estimate is as accurate as possible because a mistake at this stage would affect the stock valuation used in the preparation of final accounts. The formula for equivalent production is: $\text{Equivalent units of work-in-progress} = \text{Actual no. of units in process of manufacture} \times \text{Percentage of work completed}$ For example, if 20% work has been done on the average of 1,000 units still in process, then 1,000 such units will be equal to 200 completed units. The cost of work-in-progress will be equal to 200 completed units. Calculation of Equivalent Production: The following steps are worth noting in its calculation: (a) State the opening work-in-progress in equivalent completed units by applying the percentage of work needed to complete the unfinished work of the previous period. If the opening work-in-progress is 100 units which is 40 percent completed, then the equivalent units of this will be $100 \times 60\%$ i.e. 60 units. (b) Add to (a), the number of units started and completed during the period. This can be found out by deducting the units in the closing work-in-progress from the number of units put into the process. (c) Add to the above, the equivalent completed units of closing work-in-progress. This can be found out by applying the percentage of work done on the finished units at the end of the period. There are mainly three methods of

calculating cost per unit, out of which FIFO method and Weighted Average Method is used in equivalent production.

3.2.1.4 Preparation of Process Accounts:

Recording Of Cost Under Process Costing

The factory is divided into distinct processes or operations & an account is kept for each process, to which are debited all costs of materials, labour & overhead.

- (1) **Material:** Raw materials required for each process are drawn from stores by the issue of material requisitions. Where materials are issued in bulk, the department in charge of the process should intimate the quantity of such materials consumed during a particular period. With the help of these data the cost of raw materials are debited to process concerned.
- (2) **Labour:** Wages paid to workmen & supervisory staff engaged in particular process are allocated to the process. Where, workers are engaged in more than one process, the gross wages are distributed to different process on basis of time spent.
- (3) **Direct expenses :** Expenses such as cost of electricity, depreciation & hire charges of equipments are determined easily for each process & allocated to the process concerned.
- (4) **Overhead:** Where expenses are incurred for two or more process the total of such expenses may be apportioned to different process on a suitable basis. Sometimes overhead is recovered at predetermined rate based on direct wages, prime cost, etc.

A. Process Costing having No Process Loss:

The procedure of keeping process cost accounts where there is no process loss is very simple & presents no difficulty. All materials, wages & overheads are debited to the process concerned, while the accumulated costs are transferred to the next process as raw materials of that process.

ILLUSTRATION:

Illustration 1:

Product Z is produced after three distinct processes. The following information is obtained from the accounts of a period -

Items	Total ₹	Process - 1 ₹	Process -2 ₹	Process - 3 ₹
Direct material	2200	1800	300	100
Direct wages	400	100	200	100
Direct expenses	500	300	---	200

Production overhead incurred is Rs. 800 & is recovered on 200% of direct wages. Production during the period was 100kg there were no opening or closing stocks. Prepare process cost accounts.

Solution:

Weekending

Process — 1 Account: Output–100kg.

Dr

Cr

Particular	Cost per kg. ₹	Amount ₹	Particular	Cost per kg. ₹	Amount ₹
To Direct material	18	1800	By Output transferred to process -2	24	2400
To Direct material	1	100			
To Direct wages	3	300			
To Prod. overhead	2	200			
	24	2400		24	2400

Process- 2 Account:

Output–100kg.

Dr

Cr

Particular	Cost per kg. ₹	Amount ₹	Particular	Cost per kg. ₹	Amount ₹
To Output from Process-1	24	2400	By Output transferred to process - 3	33	3300
To Direct material	3	300			
To Direct wages	2	200			
To Prod. overhead	4	400			
	33	3300		33	3300

Process – 3 Account:

Output–100kg.

Dr

Cr

Particular	Cost per kg. ₹	Amount ₹	Particular	Cost per kg. ₹	Amount ₹
To Output from Process-2	33	3300	By Output transferred to Process Finished Stock	39	3900
To Direct material	1	100			
To Direct wages	1	100			
To Direct Expenses	2	200			
To Prod.overhead	2	200			
	39	3300		39	3900

Illustration 2 :

A product passes through three processes to completion. These processes are Process A, Process B and Process C respectively. During the week ending 30th June 2015, 2000 units are produced. The following information is obtained.

	Process A ₹	Process B ₹	Process C ₹
Material	12,000	6,000	4,000
Labour	10,000	8,000	10,000
Direct expenses	2,000	400	2,000

The indirect expenses for the period were ₹ 5,600 apportioned to the process on the basis of labour cost. Prepare process account showing total cost and cost per unit.

Solution :

Dr. **Process A Account (Output 2000 Units)** Cr.

Particulars	Total ₹	Per unit ₹	Particulars	Total ₹	Per unit ₹
To Materials	12,000	6	By output	26,000	13
To Labour	10,000	5	transferred to		
To Direct expenses	2,000	1	Process B		
To Indirect expenses	2,000	1			
	26,000	13		26,000	13

Indirect expenses as a percentage of labour = $\frac{5,600}{10,000+8,000+10,000} \times 100$

$$= \frac{5,600}{28,000} \times 100$$

$$= 20\%$$

Dr. **Process B Account (Output 2000 Units)** Cr.

Particulars	Total ₹	Per unit ₹	Particulars	Total ₹	Per unit ₹
To Process A (Tfr.)	26,000	13	By output	42,000	21
To Materials	6,000	3	transferred to		

To Labour	8,000	4	Process B		
To Direct expenses	400	0.20			
To Indirect expenses	1,600	0.8			
	32,000	21		42,000	21

Dr. **Process C Account (Output 2000 Units)** Cr.

Particulars	Total ₹	Per unit ₹	Particulars	Total ₹	Per unit ₹
To Process A (Tfr.)	42,000	21	By output	60,000	30
To Materials	4,000	2	transferred to		
To Labour	10,000	5	Finished Stock		
To Direct expenses	2,000	1			
To Indirect expenses	2,000	1			
	60,000	30		60,000	30

B) Process Costing Having Process Loss (Normal Loss, Abnormal Loss & Abnormal Gains):

In the previous illustration it was assumed that there was no loss, scrap or wastage. However, some loss, scrap or wastage is inevitable in process industries. If the loss is inevitable & within limit, it is called normal process loss. Where the loss is caused by unexpected or abnormal conditions, such as sub standard materials, bad design, etc, it is called abnormal process loss. The treatment of normal & abnormal losses differ in process accounts. All normal losses should be absorbed by good units produced, whereas abnormal losses should be valued just like good units & transferred to a separate abnormal loss account. The cause of such abnormal losses is detected for control purposes and the amount is charged to P&L account. Where the normal loss represented by scrap has some realizable value, the process account is credited with the amount realized from sale of normal scrap. The relevant process account is credited & abnormal loss account is debited with abnormal loss valued at full cost of finished output. The abnormal loss, if represented by scrap, may have similar realizable value. The amount realized from sale of scrap represented abnormal loss is credited to the abnormal loss account & the balance in the abnormal loss account is transferred to costing P&L a/c. Where however, the loss is less than the

normal loss expected, we may assume that there is an abnormal gain. The abnormal gain is valued in the same manner as abnormal loss & is credited to abnormal gain account. The amount of scrap which would otherwise have been realized had there been normal loss & no abnormal gain is debited to abnormal gain account & balance is credited to costing P&L a/c.

In valuing the cost per finished output, we require the following data:

- Normal production, i.e. input less normal loss.
- Normal cost of production i.e. all costs incurred less the amount realized from normal scrap only.

The ratio b/a is the cost per output. The rate is applied in valuing abnormal gain or loss as well as finished output. The following illustration explains the treatment of normal & abnormal losses as well as abnormal gains:

Illustration 3:

Product Y is produced after three distinct processes. The following information is obtained from the accounts of a period-

Items	Total ₹	Process - 1 ₹	Process - 2 ₹	Process - 3 ₹
Direct material	7542	2600	1980	2962
Direct wages	9000	2000	3000	4000
Production Overhead	9000	---	---	---

1000 units at Rs. 3 each were introduced to process 1. there was no stock materials or WIP at the beginning or end of the period. The output of each process passes direct to the next process & finally to finished stores. Production overhead is recovered on 100% of direct wages. The following additional data is obtained –

Process	Output during the week	% of Normal loss to Input	Value of Scrap Per unit
1	950	5%	Rs. 2
2	840	10%	Rs. 4

3	750	15%	Rs. 5
---	-----	-----	-------

Prepare process cost accounts & abnormal gain or loss accounts.

Solution:

Week ending

Process - 1 Account: Output – 950 unit

Dr

Cr

Particular	Units	Cost per kg. ₹	Amount ₹	Particular	Units	Cost per kg. ₹	Amount ₹
To units introduced	1000	3	3000	By Normal loss	50	2	100
Direct material			2600	By Output Transfer to Process -2	950	10	9500
Direct wages			2000				
Production Overhead			2000				

Week ending

Process - 2 Account: Output – 840 unit

Dr

Cr

Particular	Units	Cost per kg. ₹	Amount ₹	Particular	Units	Cost per kg. ₹	Amount ₹
To Output from Process -1	950	10	9500	By Normal Loss	95	4	380

To Direct material			1900	By abnormal	15	20	300
To Direct wages			3000	Loss			
To Prod. overhead			3000	By Output	840	20	16800
				Transfer to			
				Process -3			
	950		17480		950	24	17480

Week ending

Process - 3 Account: Output – 750 unit

Dr

Cr

Particular	Units	Cost per kg. ₹	Amount ₹	Particular	Units	Cost per kg. ₹	Amount ₹
To Output from Process -2	840	20	16800	By Normal Loss	126	5	380
To Direct material			2992	By Output	750	38	16800
To Direct wages			4000	Transfer to			
To Prod. overhead			4000	Finished			
To Abnormal Gain	36	38	1368	Stock			
	876		29130		876		29130

Finished stock account:

Dr

Cr

Particular	Units	Cost per kg. ₹	Amount ₹	Particular	Units	Cost per kg. ₹	Amount ₹
To Output from Process -3	750	38	28500	By Closing Balance	750	38	28500
			28500				28500

Abnormal Loss Account

Dr				Cr			
Particular	Units	Cost per kg. ₹	Amount ₹	Particular	Units	Cost per kg. ₹	Amount ₹
To Abnormal loss from Process - 2	15	20	300	By Debtor (sale of scrap) P&L a/c	15	4	60
							240
			300				300

Abnormal Gain Account

Dr				Cr			
Particular	Units	Cost per kg. ₹	Amount ₹	Particular	Units	Cost per kg. ₹	Amount ₹
To Abnormal loss from Process - 3	36	05	180	By Process -3	36	38	1368
To Profit and Loss A/c			1188				
	36		1368				1368

Working note –

1) Calculation of cost per unit of output:

Process 1 – a) normal production = 1000- 5% of 1000 = 950 units.

b) normal cost = cost incurred - amount of normal scrap

= ₹ 9600 – ₹ 100 = ₹ 9500

Cost per output = 9500 / 950 = ₹ 10

Process 2 -- a) normal production = $950 - 10\% \text{ of } 950 = 855$ units. b) normal cost =

$$₹ 17480 - ₹ 380 = ₹ 17100$$

$$\text{cost per output} = ₹ 17100 / 855 = ₹ 20$$

Process 3 -- a) normal production = $840 - 15\% \text{ of } 840 = 714$ units

b) normal cost = cost incurred – cost of normal scrap

$$= ₹ 27762 - ₹ 630 = ₹ 27132$$

$$\text{Cost per output} = ₹ 27132 / 714 = ₹ 38$$

2) Valuation of Loss or Gain:

Normal loss – these are represented by scrap & have been valued on their realized value. Abnormal losses or gain – these are valued like the cost per unit of output of the process in which they are occurred.

3) Abnormal Loss Account:

The amount of loss Rs. 300 is debited to this account & credited to the process 2 account. As this loss is represented by scrap & has a realizable value like the normal scrap, the amount realized from such scrap is $\text{units} \times ₹ 4 = ₹ 60$. thus the net cost of the abnormal loss is ₹ 240, which is transferred to P&L a/c.

4) Abnormal Gain Account:

The amount of gain ₹ 1368 is credited to this account & debited to process 3 accounts. However, had there been no such gain, there would have been a total normal loss of 126 units realizing ₹ 630 from sale of scrap. As the actual loss is only $(840 - 750) 90$ units realizing ₹ 450. So, the balance of ₹ 180 (i.e. ₹ 630-450) being not realized from scrap should be debited to abnormal gain account in order to reduce the gain & bring the system under normal conditions. The net gain of ₹ 1188 is credited to P&L a/c.

Illustration 4 :

A chemical company produces a product with 2% of weight loss in each process and 10% of scrap loss in each process for which ₹ 100 p.u. for process 1 and 2 is realised and ₹ 20 p.u. for process 3 is realised.

The input quantity for each process is 1,000 units, 140 units and 1,348 units respectively.

	Process 1	Process 2	Process 3
Direct Material	1,20,000	28,000	1,07,840
Manufacturing wages	20,500	18,520	15,000
General expenses	10,300	7,240	3,100
Stock kept for sale	25%	50%	100%
Passed to next process	75%	50%	Nil

Solution :

Dr.

Process 1 A/c

Cr.

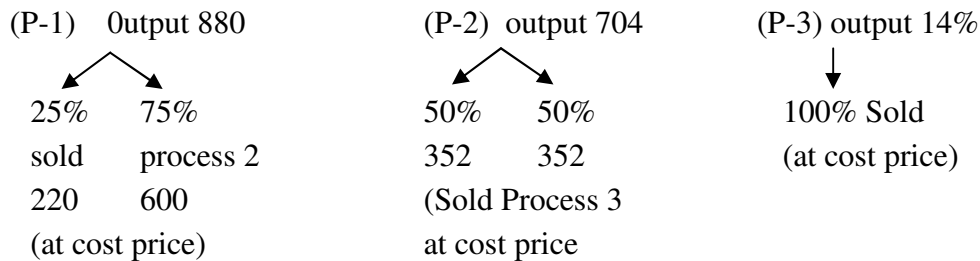
Particulars	Total ₹	Per unit ₹	Particulars	Total ₹	Per unit ₹
To DM (RM Introduced)	1,000	1,20,000	By Normal loss		
To Manufacturing wages		20,500	(a) Weight loss	20	Nil
To General Expenses		10,300	(2% of 1000)		
			(b) Scrap	100	
			(10% of 1000		
			100 x ₹ 100		10,000
			By Output c/d	880	1,40,800
			(C.P.U. = 160)		
	1,000	1,50,800		1,000	1,50,800
To Output b/d	880	1,40,800	By Sales (220 x ₹ 160)	220	35,200
			By Output transferred	660	1,05,600
			to P-2 A/c		
			(C.P.U. = ₹160)		
	880	1,40,800		880	1,40,800

Note : When the question is silent, the goods sold will be recorded at cost price. Alternatively, it is recorded at COST + PROFIT = SALES.

Dr. Process 2 A/c			Cr.		
Particulars	Qty	Amount	Particulars	Qty	Amount
To Input from Process 1 A/c	660	1,05,600	By Normal loss		
To DM	140	28,000	(a) Weight loss	16	Nil
To Manufacture wages		18,520	(2% of 800)		
To General expenses		7,240	(b) Scrap		
			(10% of 800	80	
			80 x 100		8,000
			By Output c/d	704	1,51,360
			(C.P.U. = 215)		
	800	1,59,360		800	1,59,360
To Output b/d	704	1,51,360	By Sales (352 x 215)	352	75,680
			By Output transferred to P-3 A/c	352	75,680
			(C.P.U. = 215)		
	704	1,51,360		704	1,51,360

Dr. Process 3 A/c			Cr.		
Particulars	Qty	Amount	Particulars	Qty	Amount
To Input from Process 2 A/c	352	75,680	By Normal loss:		
To DM	1,348	1,07,840	(a) Weight loss	34	Nil
To Manufacture wages		15,000	(12% of 1,700)		
To General expenses		3,100	(b) Scrap		
			(10% of 800	170	
			80 x 100		3,400
			By Output c/d	1,700	2,01,620
			(C.P.U. = 132.5)		
	1,700	2,1,620		1,700	2,1,620
To Output b/d	1,496	1,98,220	By Sales A/c	1,496	1,98,220
			(100 Sold)		
			(1,497 x 132.5)		
	1,496	1,98,220		1,496	1,98,220

Working Note 1 :



C) Processes having WIP at different stages of Completion in Respect of Material and Labour (FIFO Method)

So far we have ignored the existence of WIP in processes. But in continuous process there must be some WIP in the end of the period & the degree of completion of closing WIP may be quite different from the the degree of completion of opening WIP. This problem can be solved by calculating the equivalent production. Equivalent or effective production represents the production in terms of completed units. From the schedule showing the stage of completion, equivalent production should be ascertained. Suppose, the closing stock is 200 units 40% complete in respect of material, labour & overhead. This is equivalent to 80 units which are 100% complete.

a) First In First Out (FIFO) Method:

Process costs can be mainly computed either by FIFO method or by average method. Under the FIFO the cost added in each process during the current period is prorated to the production necessary to complete the opening WIP, to complete the units introduced & completed during the period & to partially completed units in closing WIP. The costs added in each process during the current period are divided by equivalent production during the period. The objective of FIFO method is to value the inventory at current costs & as such the main problem is to calculate the equivalent production under this method.

Where there is closing WIP, the work done up to the stage of completion should be considered while computing equivalent production. The computation of equivalent production will be understood from the following illustrations –

Illustration 5:

In process 1, 1000 units were introduced during January. 200 units 40% complete in all respects remained as closing WIP at the end of the month. Compute the equivalent production & obtain cost of closing WIP if total process cost during the period be ₹ 1760.

Solution:**Statement of Equivalent Production**

Output		Equivalent Production		
Items	Units	Units	Prod. (%)	Remarks
Introduced & completely produced during the period	800	800	100%	
Work on closing WIP	200	80	40%	
Total	1000	880		

Cost per equivalent production = ₹ 1760 / 880 = ₹ 2. Value of closing stock = 80 × ₹ 2 = ₹ 160.

Note: although 800 units were completed during the period, equivalent production was 880 units.

Under the FIFO method where there is opening as well as closing WIP, greater care must be taken in determining equivalent production. If the opening WIP be 40% complete, 60% work must be taken into account during the current period to complete the opening WIP under the FIFO method.

Illustration 6 :

A product passes through 3 process before being finally transferred to Finished Stock A/c 10,000 units @ ₹ 5 was introduced in Process 1 A/c.

No.	Particulars	1	2	3
1	Sundry Material (₹)	5,000	8,000	6,000
2	Direct Labour (₹)	10,000	12,000	15,000
3	Direct Expenses (₹)	4,000	5,000	7,000
4	Actual output (unit)	9,000	8,550	8,210
5	Normal wastage	10%	5%	4%

6	Value of scrap per unit	5	6	5
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Production Overheads are charged at 60% of the DL for each process. Semi-finished product of each process being saleable 1/3 of the output of process 1 and 2/3 of the output of process 2 was sold in the market at the profit of 20% and 25% on cost respectively. Remaining output was transferred to the next process. Output of last process was sold at ₹ 30 per unit. Calculate cost per unit for each process.

Solution :

Dr.			Cr.		
Process 1 A/c					
Particulars	Qty	Amt	Particulars	Qty	Amt
To R/M Introduced (10,000 x 5)	10,000	50,000	By Normal loss: Scrap (10% of 10,000)	1,000	5,000
To DM		5,000	(1,000 x 5)		
To DL		10,000			
To DE		4,000	By Output c/d (C.P.U. = 7.78)	9,000	70,000
To Production Overheads (60% of DL)		6,000			
	10,000	75,000		10,000	75,000
To Output b/d	9,000	70,000	By Sales (3,000x9.34)	3,000	28,020
To Costing P & L A/c (3,000 x 1.56)		4,680	By Output transferred to Process 2 A/c (C.P.U. = 7.78)	6,000	46,660
	9,000	74,680		9,000	74,680

Dr.			Cr.		
Process 2 A/c					
Particulars	Qty	Amt	Particulars	Qty	Amt
To Input from Process 1 A/c	6,000	46,660	By Normal loss:		
To DM		8,000	Scrap (5% of 6,000)	300	1,800
To DL		12,000	(300 x 68)		

To DE		5,000	By Output (c/d) (C.P.U. = 13.52)	8,550	1,15,590
To Production Overheads (60% of DL)		7,200			
to Abnormal Gain	2,850	38,530 (Formula)			
	8,850	1,17,390		8,850	1,17,390
To Output b/d	8,850	1,15,590	By Sales	5,700	96,330
To Closing P&L A/c (5,700 x 3.38)		19,266	(5,700 x 16.90)		
			By Output transferred to Process 3 A/c) (C.P.U. = 13.52)	2,850	38,526
	8,850	1,34,856		8,550	1,34,856

Dr.

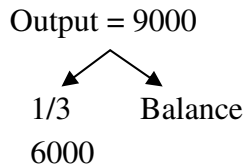
Process 3 A/c

Cr.

Particulars	Qty	Amount	Particulars	Qty	Amount
To Input from Process 2 A/c	2,850	38,526	By Normal loss:		
To DM		6,000	Scrap	114	570
To DL		15,000	(4% x 2,850)		
To DL		7,000	(114 x 5)		
To Production Overheads (60% of DL)		9,000 (Formula)	By Output c/d	8,210	2,24,923
To Abnormal Gain	5,474	1,49,967	(C.P.U.= 27.40)		
	8,324	2,25,493		8,324	2,25,493
To Output b/d	8,210	2,24,932	By Sales A/c	8,210	2,46,300
To Costing P & L A/c (Balancing figure)		21,377			
	8,210	2,46,300		8,210	2,46,300

Note : In this question, first time closing the Quality column of Process 1 A/c, the quantity column tallies. Therefore, there is no balancing figure in Qty column. Hence, no abnormal loss or abnormal gain.

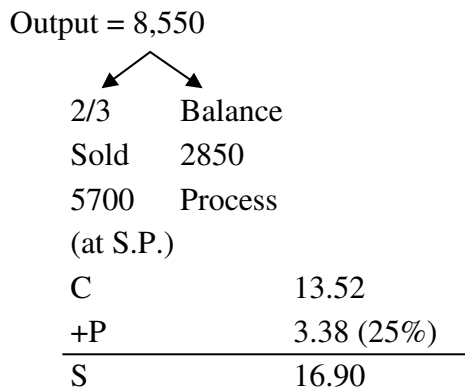
Working Note 1 : process 1

Output = 9000

 1/3 Balance
 6000

Sold	Process 2
3000 (at S.P.)	
C	7.78
+P	1.56 (20%)
= Sales	9.34

Working Note 2 : Process 2 A/c

$$\begin{aligned}
 \text{Abnormal Gain (Amt)} &= \frac{\text{Dr}-\text{Cr (Amt column)}}{\text{Dr}-\text{Cr (Qty column)}} \times \text{Abnormal Gain (Qty)} \\
 &= \frac{78,860-1,800}{6,000-300} \times 2,850 \\
 &= \frac{77,060}{5,700} \times 2,850 = ₹ 38,530
 \end{aligned}$$

Output = 8,550

 2/3 Balance
 Sold 2850
 5700 Process
 (at S.P.)

C	13.52
+P	3.38 (25%)
S	16.90

Working Note 3: Process 3 A/c

$$\begin{aligned}
 \text{Abnormal Gain (Amt)} &= \frac{\text{Dr}-\text{Cr (Amt column)} \times \text{Ab.Gain (Qty)}}{\text{Dr}-\text{Cr (Qty column)}} \\
 &= \frac{75,526-570}{2,850-114} \times 5,474 = ₹ 1,49,967
 \end{aligned}$$

Process 3

Output – 8210



Assume 100% sold

= 8210 (at S.p.)

C	27.40
+ P	2.60
S	30.00 (Given)

Illustration 7:

In process A, opening WIP in February was 200 units 40% complete. 1050 units were introduced during the period, 1100 completed units were transferred to process B & 150 units remained as closing WIP 70% complete. Compute equivalent production & apportion the total process costs of Rs. 2250 to production & WIP inventories under FIFO method.

Solution:

Process A		Process Cost Sheet		Period – February Opening WIP – 200 units (40%) (FIFO Method)		
Introduced – 1050 units						
Statement of Equivalent Production						
Input		Output		Equivalent production		
Items	Units	Items	Units	Units	% completion	Remarks
Opening WIP	200	Work on WIP	200	120	60%	
Introduced	1050	Introduced & completed during the period	900	900	100%	
		Transfer to process B	1100			
		Work on closing WIP	150	105	70%	
Total	1250		1250	1125		

Cost per unit equivalent production = ₹ 2250 / 1125 = ₹ 2			
Statement of Apportionment of Process Cost			
Items	Equivalent production	Cost per unit	Cost
Opening WIP (for completion) Introduced & completed during the period	Units 120	₹ 2	₹ 240
Closing WIP	900	2	1800
	105	2	210
Total process cost during the period			2250

Note: Although 1100 units were completed & transferred to process B, the equivalent production during the month was 1125 units.

- (b) **Average Cost Method:** This method is useful when price fluctuate from period to period. The closing valuation of work-in-progress in the old period is added to the cost of new period and an average rate obtained. In calculating the equivalent production opening units will not be shown separately as units of work-in-progress but included in the units completed and transferred.
- (c) **Weighted Average Cost Method:** In this method no distinction is made between completed units from opening inventory and completed units from new production. All units finished during the current accounting period are treated as if they were started and finished during that period. The weighted average cost per unit is determined by dividing the total cost (opening work-in-progress cost + current cost) by equivalent production.

3.2.1.5 Concepts of Joint Products and By Products:

In several industries more than one product emerges from the manufacturing process. These products are sometimes produced intentionally while in some cases they emerge out of the main manufacturing process. Such products are termed as either joint products or by-products. Though sometimes these terms are used interchangeably, there is a major difference between the two and therefore it is necessary to understand clearly the difference between them. Similarly, there is a difference between the accounting of the two and hence it is essential to define clearly the concepts of joint products and by-products. In CIMA Terminology

defines joint products as “two or more products separated in the course of processing each having a sufficiently high value to merit recognition as a main product”. Joint products imply that they are produced from the same basic raw material, are comparatively of equal importance, are produced simultaneously by a common process and may require further processing after the point of separation.

The term ‘by-products’ is sometimes used synonymously with the term ‘minor products’. The by-product is a secondary product, which incidentally results from the manufacture of a main product. By-products are also produced from the same raw material and same process operations but they are secondary results of operation. The main difference between the joint product and by product is that there is no intention to produce the by-product while the joint products are produced intentionally. The relationship between the by-product and the main product changes with changes in economic or industrial conditions or with advancement of science. The by-product of an industry may become a main product and main product may become a by-product subsequently. For example, (a) in sugar industry, sugar is a main product and molasses is a by-product (b) in coke ovens, gas and tar are incidentally produced in addition to the main product coke. Gas and tar are, therefore, treated as by-products. These minor secondary products have saleable or usable value and are incidentally produced in addition to the main product. In CIMA Terminology, By-product is “a product which is recovered incidentally from the material used in the manufacture of recognized main products such as having either a net realizable value or a usable value which is relatively low in comparison with the saleable value of the main products. By products may further be processed to increase their realizable value”. Thus the term ‘by-product’ is generally used by businessmen and accountants to denote one or more products of relatively small value that are produced simultaneously with a product of greater value.

Illustration 8:

Product Zeta yields two by-products A and B. The joint cost of manufacture is ₹ 32,900. From the following information apportion the joint cost of manufacture:

Particulars	Zeta	A	B
Sales ₹	50,000	20,000	12,500
Manufacturing cost after separation		2,500	2,000

Estimated selling expenses on sales		20%	20%
Estimated profit on sales		25%	30%

Solution :

Statement of Cost of By-Products A and B

	A ₹	B ₹
Sales	20,000	12,500
Less : Profit	5,000	3,700
Cost (i)	15,000	8,750
Less : cost after separation	2,500	2,000
Selling expenses	2,500	4,000
Total (ii)	6,500	4,500
Share in joint cost (i-ii)	8,500	4,250

Illustration 9 :

X, Y Ltd. manufactures product A which yields two by-products B and C. The actual joint expenses of manufacturing for a period water ₹ 8,200.

The profits on each product as a percentage of sales are 33-1/3%, 25% and 15% respectively. Subsequent expenses are as follows:

Particulars	‘A’	‘B’	‘C’
Material	100	75	25
Direct	200	125	50
Overheads	150	125	75
	450	325	150
Sales	6,000	4,000	2,500

Apportion the joint expenses

Solution :**Statement Showing Apportionment of Joint Expenses**

Particulars	A	B	C	D
Sales	6,000	4,000	2,500	12,500
(-) Profit	2,000	1,000	375	3,375
Total Cost (Joint & Separate cost)	4,000	3,000	2,125	9,125
Separate Expenses	450	325	150	925
Share of Joint Expenses	3,550	2,675	1,975	8,200

Illustration 10:

The total joint cost of product X, Y and Z till the split off point are Rs. 28. The market price of these products are ₹ 12, ₹ 18 and ₹ 38 respectively. Cost of manufacture beyond the split off point are ₹ 4, in case of product X, ₹ 2 in case of product Y and ₹ 6 in case of product Z. Allocate the joint cost by market price method.

Solutions:

Products	Market price of joint products ₹	Cost of manufacture beyond split off point ₹	Market price-Cost of manufacture beyond split off point ₹	Base of allocation	Joint cost apportioned to joint products ₹
X	12	4	8	1/7	4
Y	18	2	16	2/7	8
Z	38	6	32	4/7	16
			56	7/7	28

Adoption of this method may create problems in times of fluctuating market prices of the joining products. It will be appropriate in such times to consider the average market price for each month for each product.

Illustration 11: The following data has been extracted from the books of Atharv Coke Ltd.

Joint products	Yield (in lb.) of recovered products per tone of coal
Coke	1,420
Coal tar	120
Benezol	22
Sulphate of ammonia	26
Gas	412
Total	2,000

The price of coal is ₹ 80 per tone. The direct labour and overhead cost to the point of split off are Rs. 40 and ₹ 60 respectively per tone of coal. Calculate the material, labor and total cost of each product on the basis of weight.

Solution :

Statement of Apportionment of Joint Cost

Particulars Rs.	Yield in lbs ₹	% of Total cost ₹	Apportionment of cost			Total ₹
			Coal ₹	Direct Labour ₹	Overhead ₹	
Coke	1,420	71.00	56.80	28.40	42.60	127.80
Coal tar	120	6.00	4.80	2.40	3.60	10.80
Benezol	22	1.10	0.88	0.44	0.66	1.98
Sulphate of ammonia	26	1.30	1.04	0.52	0.78	2.34
Gas	412	20.60	16.48	8.24	12.36	37.08
Total	2,000	100	80.00	40.00	60	180.00

Illustration 12:

The three joint products produced in a factory are A,B,C. Their joint costs is ₹ 60,000. Quantities produced are as follows:

A	2,000
B	800
C	1,200

On the basis of technical evaluation, points allotted to products A, B, C are 3.2, 5 and 8% per unit respectively. Apportion the joint cost.

Solution :

Products	Units produced (a)	Points assigned (b)	Weighted units (c)	* Cost per weighted units (d)	Apportioned weighted units (d)
A	2,000	3.2	6,400	3	19,200
B	800	5	4,000	3	12,000
C	1,200	8	9,600	3	28,800
			20,000		60,000

* Working note :

$$\frac{\text{Joint Cost}}{\text{total number of weighted unit}} = \frac{\text{Rs.60,000}}{20,000 \text{ units}} = ₹ 3 \text{ per unit}$$

Illustration 13

The following data have been extracted from the books of M/s. Southern Coke Co. Ltd.

JOINT PRODUCTS**YIELD IN LB OF RECOVERED
PRODUCTS PER TONNE OF COAL**

Coke	1,420
Coal tar	120
Benzol	22

Sulphate of Ammonia

26

Gas

412

2,000

The price of coal is ₹ 80 per tone. The direct labour and overhead costs to the point of split-off are ₹ 40 and ₹ 60 respectively per tone of coal. Calculate the material, labour and total cost of each product on the basis of weight.

Solution :

Statement Showing Calculation of Material, Labour and Total Cost of Each Product :

Element	Total	(1420) Coke	(120) Coal tar	(22) Benzol	(26) Sulphate	(412) Gas
	₹	₹	₹	₹	₹	₹
Material	80.00	56.80	4.80	0.88	1.04	16.48
Labour	40.00	28.40	2.40	0.44	0.52	8.24
Overheads	60.00	42.60	3.60	0.66	0.78	12.36
	180.00	127.80	10.80	1.98	2.34	37.08

Illustration 14 :

A factory engaged in the production of Chemical X and in the course of manufacture in a by-product-Y is produced which after a separate process has a commercial value. Following are the information for the month of March.

	Joint Expenses	Separate Expenses	
		X	Y
Materials (₹)	10,000	2,000	2,800
Labour (₹)	4,000	2,500	2,500
Overheads (₹)	2,500	1,400	1,000

The output for the month was 150 quintals of X and 50 quintals of Y. The selling price of product Y is ₹ 200 per quintal. The profit on products Y is $33\frac{1}{3}\%$ on cost price. Prepare an Account to show the cost of x per quintal.

Solution :

Joint Expenses Account

Dr.		Cr.	
Particulars	Amount ₹	Particulars	Amount ₹
To, Material	10,000	By, Y A/c	1,200
To, Labour	4,000	By, X's A/c	15,300
To, Overheads	2,500		
	16,500		16,500

X's Account

Dr.		Cr.	
Particulars	Amount ₹	Particulars	Amount ₹
To, Material	2,000	By, Cost of production A/c @ 141.33 per quintal.	21,200
To, Mabour	2,500		
To, Overheads	1,400		
To, Joint expenses A/c *	15,300		
	21,200		21,200

Y's Account

Dr.		Cr.	
Particulars	Amount ₹	Particulars	Amount ₹
To, Material	2,800	By, Cost of production A/c (150 × 50)	7,500
To, Mabour	2,500		
To, Overheads	1,000		
To, Joint expenses A/c	1,200		
	7,500		7,500

Illustration 15 :

In manufacturing the main product 'A' a company processes the resulting waste material into two by products B and C. Using reversal cost method of by products, prepare a comparative profit and loss statement of the three products from the following data :

- (i) Total cost upto separation point was ₹ 68,000

	A (₹)	B (₹)	C (₹)
(ii) Sales (all production)	1,64,000	16,000	24,000
(iii) Estimated net profit % of sale value	-	20%	30%
(iv) Estimated Selling expenses as % of sales value	20%	20%	20%
(v) Costs after separation	-	4,800	7,200

Solution :**Apportionment of Joint expenses for the products**

Particulars	B (₹)	C (₹)
Sales	16,000	24,000
(-) Profit	3,200	7,200
Total Cost	12,800	16,800
(-) Selling expenses	3,200	4,800
Manufacturing cost	9,600	12,000
(-) Separate expenses	4,800	7,200
Joint Expenses	4,800	4,800

Joint expenses of A = 68,000 – (4,800 + 4,800) = 58,400.

Profit and Loss Statement :

	Particulars	A ₹	B ₹	C ₹	Total ₹
(i)	Joint Cost	58,400	4,800	4,800	68,000
(ii)	Separate Cost	--	4,800	7,200	12,000

(iii)	Manufacturing cost (I + II)	58,400	9,600	12,000	80,000
(iv)	Selling expenses	32,800	3,200	4,800	40,800
(v)	Total cost (III + IV)	91,200	12,800	16,800	1,20,800
(vi)	Profit *	72,800	3,200	7,200	83,200
(vii)	Sales	1,64,000	16,000	24,000	2,04,000

Check Your Progress

A) Select the right option:

- Process Costing is applied when___products are produced.
 - Unique
 - Special
 - Homogeneous
 - Basic.
- When the manufacturing process is_____principles of process costing are made applicable.
 - Random
 - Intermittent
 - Homogeneous
 - Continuous
- In process costing; the finished product emerges at the__stage.
 - Last
 - Middle
 - First
 - Specified
- Any loss over and above the normal loss is termed as___loss.
 - Total
 - Abnormal
 - Actual
 - Notional
- _____ concept is used while calculating the equivalent units.
 - Proportion
 - Mathematical
 - Percentage Completion
 - Rational

B) Fill in the blanks:

- Units in process are valued using either the____method or the Weighted Average Method.
- Products having equal economic importance are referred to as____products.
- ____ Costing is applied when the products emerging from a process are of unequal importance.
- A loss inherent to a process is called as_____loss.

5. ____ arises when the actual process loss is less than what is anticipated.

C) Match the following:

- | | |
|--------------------------------------|---------------------------------------|
| 1. Cost per unit. | A. Output transferred with a mark up. |
| 2. Inter process profit. | B. Part of Process Costing. |
| 3. Joint and By Product. | C. Output of earlier process. |
| 4. Abnormal Gain. | D. Total Cost/Units Produced. |
| 5. Input for the subsequent process. | E. Output more than expected. |

3.3 Summary:

From the overall discussions, it seems that process costing is an aspect of operation costing that is used to ascertain the cost of the product at each process or stage of manufacture. This method of accounting is used in industries where the manufacturing process is divided into two or more processes. The objective is to find out the total cost of the process and the unit cost of the process for each and every process. Usually, the industries where process costing is used are textiles, oil industries, cement, pharmaceuticals, etc. Process costing is used in businesses where the products are homogeneous and standardized, and the final product is the result of a sequence of processes. Process costing is used in mass production industries producing standard products. The major industries using process costing are the sugar industry, paper industry, mining industry, cement industry, brewery industry, flour milling industry, etc. The usual percentage of waste arising in a particular process or operation is known as normal loss. It is a loss that cannot be avoided, as it is expected to occur during normal conditions. Any loss in excess of normal process loss is known as abnormal process loss. This loss may be attributable to faulty plant design, sabotage, carelessness, breakdown of the machinery, accidents, use of defective materials, etc. Abnormal effects occur when the actual production exceeds the expected production. The amount shall be debited to the relevant process account and credited to the Abnormal Effectives Account, which shall then be transferred to the Costing Profit and Loss Account. By-products mean secondary products that are relatively of smaller value and are incidentally or unavoidably produced in the course of manufacturing the main product. Two or more products separated in the course of processing, each having sufficiently high saleable value to merit recognition as a main product, are known as joint products. In the production of co-products, one or

more co-products can proceed without the production of other products. Such co-products are produced simultaneously from the same raw material in natural proportions by a common process. Thus, process costing is significant in ascertaining the cost of each stage of production.

3.4 Term to Remember:

- **Significal** : Thus, process costing have in ascertain the cost of each stage of production.
- **Input**: Material introduced for manufacture of finished product
- **Output**: The final outcome of the manufacturing process.
- **Normal Loss**: Inevitable process loss
- **Abnormal Loss**: Loss over and above the normal loss
- **Abnormal Gain**: Output exceeding the normal benchmark
- **Inter Process Profit**: Profits earned by individual processes
- **Equivalent Units**: Units expressed in terms of completed units.

3.5 Answers to Check Your Progress:

- A. 1 – c, 2 - d, 3 -a, 4 - b, 5 – c,
- B. 1- First in First Out, 2 - Joint, 3 - By Product, 4 - Normal, 5 - Abnormal Gain.
- C. 1 - d, 2 - a, 3 - b, 4 - e, 5 - c.

3.6 Exercise:

1. Define Process Costing and give examples of its application in industries. How does it differ from Job Costing?
2. What are Joint and By Products? How are they evaluated considering the principles of Process Costing?
3. Define joint products and by-products and give suitable example on each.
4. A product passes through three processes - A, B and C. 10,000 units at a cost of ₹ 1.10 were issued to Process A. The other direct expenses were as follows:

	Process-A	Process-B	Process-C
	₹	₹	₹
Sundry materials	1,500	1,500	1,500
Direct labour	4,500	8,000	6,500
Direct expenses	1,000	1,000	1,503

The wastage of process 'A' was 5% and in process 'B' 4% The wastage of process 'A' was sold at ₹ 0.25 per unit and that of 'B' at ₹ 0.50 per unit and that of C at ₹ 1.00. The overhead charges were 160% of direct labour. The final product was sold at ₹10 per unit fetching a profit of 20% on sales. Find out the percentage of wastage in Process 'C'.

5. SM Ltd., furnished you the following information relating to process B for the month of October, 2017.

- (i) Opening work-in-progress- NIL
- (ii) Units introduced - 10,000 units @ ₹ 3 per unit
- (iii) Expenses debited to the process; Direct materials ₹ 14,650; Labour ₹ 21,148; Overheads ₹ 42,000 (iv) Finished output - 9,500 units
- (v) Closing work-in-progress 350 units; Degree of completion : Material 100%; Labour and overheads 50%
- (vi) Normal loss in process- one percent of input
- (vii) Degree of completion of abnormal loss: Material 100% ; Labour and Overheads 80%
- (viii) Units scrapped as normal loss were sold at ₹ 1 per unit
- (ix) All the units of abnormal loss were sold at ₹ 2.50 per unit. Prepare:
 - a. Statement of Equivalent Production
 - b. Statement of Cost
 - c. Process - B Account
 - d. Abnormal Loss Account.

6. From the following data, PREPARE process accounts indicating the cost of each process and the total cost. The total units that pass through each process were 240 for the period.

	Process I (₹)	Process II (₹)	Process III (₹)
Materials	1,50,000	50,000	20,000
Labour	80,000	2,00,000	60,000
Other	26,000	72,000	25,000

Indirect expenses amounting to ₹ 85,000 may be apportioned on the basis of wages. There was no opening or closing stock.

7. RST Limited processes Product Z through two distinct processes – Process- I and Process- II. On completion, it is transferred to finished stock. From the following information for the year 20X8-X9, PREPARE Process-I, Process-II and Finished Stock A/c:

Particulars	Process I	Process II
Raw materials used	7,500 units	--
Raw materials cost per unit	₹ 60	--
Transfer to next process/ finished stock	7,050 units	6,525 units
Normal loss (on inputs)	5%	10%
Direct wages	₹ 1,35,750	₹ 1,29,250
Direct Expenses	60% of Direct wages	65 % of Direct wages
Manufacturing overheads	20% of Direct wages	15 % of Direct wages
Realisable value of scrap per unit	₹ 12.50	₹ 37.50

6,000 units of finished goods were sold at a profit of 15% on cost. Assume that there was no opening or closing stock of work-in-process.

8. Opening work-in-process 1,000 units (60% complete); Cost ₹ 1,10,000. Units introduced during the period 10,000 units: Cost ₹ 19,30,000. Transferred to next process- 9,000 units.

Closing work- in - process - 800 units (75% complete). Normal loss is estimated at 10% of total input including units in process at the beginning. Scraps realize ₹ 10 per unit. Scraps are 100% complete.

Using FIFO method, COMPUTE equivalent production and cost per equivalent unit. Also evaluate the output.

3.7 References for Further Study:

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5. M. N. Arora (2013). *Cost Accounting: Principles and Practice*. Noida: 12th edition, Vikas Publishing House, pp1.1-13.30.



Unit-4

Contract Costing

- 4.0 Objectives
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4.0 Objectives:

After studying this unit, students will be able :

1. To acquaint the knowledge and skill to prepare contract account.
2. To understand the specific aspects of contract costing
3. To know basic terms and concepts of Contract costing.
4. To know contract cost is calculated and profit on incomplete contract is treated in cost accounts.

4.1 Introduction:

Contract Costing is nothing but an extension of the principles of Job Costing. Just as each Job is unique; each Contract is also unique. Main features in Contract Costing run parallel to those of Job Costing; with certain elements like Contracts spilling over more than one accounting period, incomplete contracts, valuation of WIP, difficulty in predicting future costs etc. making it necessary to have special adjustments while compiling the Contract Costs. All these enable one to arrive at a fair cost of the Contract for accounting as well decision-making purpose. In order to have a objective calculation of the Contract Costs the ICAI has also prescribed Accounting Standards for assisting the Business Accountant in enabling him in doing his/her job efficiently.

4.2 Presentation of Subject Matter:

4.2.1 Contract Costing:

The principles of job costing are applicable to contract costing. A separate account is kept for each individual contract or job undertaken for the purpose of determining the profit or loss under each. Contract costing is employed by such concerns as firms of builders, civil engineering contractors, mechanical engineering firms. Hence, it seems that contract costing used in Building construction, Road construction, Bridge construction, Ship building and other civil engineering works etc.

One aspect of contract costing is that most of the cost can be allocated direct to contracts. Under job and other costing systems expenditure is normally allocated first to the cost centre and secondly to the individual jobs, the nature of contract costing is such that only allocation required is direct to the contract. Overheads are limited to head office and central storage cost forming a small percentage of total cost of contracts are recovered on some arbitrary basis such as percentage of wages, material or prime cost.

4.2.2.1 Meaning of Contract Costing:

Contract costing, also known as terminal costing, is a variant of job costing. Contract means a big job in which work is done at site and not in factory premises. The cost of each contract is ascertained. Thus, in this method of costing, each

contract is a cost unit and an account is opened for each contract in the books of contractor to ascertain profit/loss thereon.

Contract Costing is the activity of determining the cost of Contract like Construction of a house, building, bridge, road, ship etc. Thus, all the elements that go into the execution or completion of a Contract are captured in such a way that they facilitate the compilation of the Contract Cost.

4.2.2.2 Features:

Since each Contract is unique in itself; like in Job Costing; each Contract has its own Cost. Thus, the activity of calculation of the cost of the Contract comprises of an elaborate system for tracking all material that is issued for a contract, material transferred from or to a contract, material returned from a contract, material lost/stolen/destroyed etc. Similarly, details of labour deployed are kept for facilitating calculation of labour cost. Elements of overheads are charged as per the corporate policy so as that each Contract has its own fare share of cost thereof. Special adjustments are required in respect of incomplete contracts, amount carried to the Profit and Loss Account in respect of contracts in progress, valuation of WIP etc. In order to protect the interest of the Contractor executing the contract, specific terms are laid in Contracts viz. escalation clause, cost plus contracts etc. Therefore, it is understood that the contract costing usually shows the following features:

1. Contracts are generally of large size and, therefore, a contractor usually carries out a small number of contracts at a particular point of time.
2. A contract generally takes more than one year to complete,
3. Work on contracts is carried out at the site of contracts and not in factory premises.
4. Each contract undertaken is treated as a cost unit.
5. A separate contract account is prepared for each contract in the books of contractor to ascertain profit or loss on each contract.
6. Nearly all labour cost will be direct.
7. Most expenses (e.g., electricity, telephone, insurance, etc.) are also direct.
8. Specialist subcontractors may be employed for say, electrical fittings, welding work, glass work, etc.

9. Plant and equipment may be purchased for the contract or may be hired for the duration of the contract.

4.2.2.3 Accounting Procedure:

The usual heads under which costs of individual contract are collected are as under:

1. **Material:** All material issued to a particular Contract is charged to that particular contract directly. All returns and transfers are credited to that particular contract.
2. **Labour:** All labour that is specifically engaged on a particular contract is directly debited to the concerned contract as regards its rates and charges. Other indirect wages may be charged to each contract on some suitable basis.
3. **Expenses:** All expenses directly incurred for particular contracts are directly debited to it e.g. hire charges of particular machinery.
4. **Depreciation on Plant and Machinery:** In case of machinery used for contract work, there are two methods for charging depreciation on it to the contract: -
 - a. The contract is debited with the value of the machinery and when the work is completed credited with the sale proceeds of it in case it is sold or otherwise credited with the value of it by way of revaluation,
 - b. The particular contract account is debited only with the depreciation which is allocable to that particular contract.
5. **Sub-Contract Charges:** In case any work relating to a contract is sub-contracted, the charges for the same are debited to that particular Contract a/c.
6. **Other Expenses and Accrued Charges:** All other expenses related to a Contract are directly debited to it. In respect of outstanding charges, the same are debited to the concerned Contract A/c.

4.2.2.4 Retention Money:

After the completion of the contract, the asset created is handed over to the contractee for its fruitful usage. Many times, during the course of the usage certain problems arise like, leakage from the roof of a house/building constructed, cracks in the walls of the construction, wear out of the layers of the road built etc. In order to protect the contractee from such quality related issues, there is a practice of retaining part of the consideration of the contract with the contractee as a performance

guarantee. This amount retained is called as Retention Money; and is normally kept with the contractee during the guarantee/warranty period; and after its elapse is returned back to the contractor.

4.2.2.5 Escalation Clause:

‘Contracts with Escalation Clause’ is a provision by virtue of which the contractor gets the actual increase in the cost as a percentage of the contract price initially agreed by him. This feature was introduced due to the time span over which the execution of the contract stretches; which makes an accurate estimation of the contract costs for quotation purpose very difficult. Besides, this clause comes to the rescue of the contractor in situations of war or political uncertainty when prices of material fluctuate wildly.

4.2.2.6 Work in Progress:

In case of incomplete Contracts, the amount that is to be taken to the Balance Sheet as Work in Progress would be either of the two:

1. First Method:
 - a. If there is profit, then the amount taken to the credit of P&L A/c is added to the Cost of Contract, and from this cash received on the Contract is deducted. This is WIP for B/S purpose, and
 - b. If there is a loss, the amount of loss is deducted from the Cost of Contract, and from it is deducted the cash received on the Contract. This is the WIP. Take examples showing the preparation of the Contract A/c and the amount of Profit and Loss figure.
2. Second Method: $\text{WIP for Balance Sheet} = [\text{Work Certified} + \text{Work Uncertified}] - [\text{P\&L A/c Reserve A/c} + \text{Cash Received}]$.

4.2.2.7 Cost Plus Contract:

In many cases it so happens that it becomes difficult to quote the exact price for a Contract. This may be due to the fact that a Contract is a special one, or one which was not executed in the past or the circumstances are changing so fast that a fair estimate of the Contract Cost is not possible e.g. political crisis, war etc. In such cases contractors take help of the ‘cost-plus contract’ clause due to which they get not only the actual cost incurred by them on the contract but also a fair margin of

profit on it. For this it is necessary to have a prior agreement with respect to proof of actual expenses to be produced, agreed wastages etc. Its disadvantage is that it has no way of controlling inefficiency.

4.2.2.8 Preparation of Contract Account:

➤ Recording of Cost of Contract:

All costs are recorded against the individual contract. The recording procedure of the following items may be noted carefully:

- 1) Materials:** Materials required for a specific contract is debited to that contract account. Materials returned under materials returned note is credited to that contract. Materials transferred from one contract to another are recorded in the usual way. At the end of the accounting period the value of materials on site is a carried forward as a charge against the next period.
- 2) Wages:** Wages of all workers engaged on a particular contract are allocated direct to that contract regardless the work they perform. Where workers move from one contract to another, time sheets must be maintained and wages may be distributed on the basis of time spent on each contract. The wages of head office and central stores is considered as overhead and are charged to contracts on some equitable basis.
- 3) Expenses:** All expenses except material and wages are charged to individual contracts as and when they are incurred.
- 4) Plant and Machinery:** For use of plant and machinery depreciation may be charged in any of the following ways,
 - (a) When the plant is required to be used for a long time, the total cost of asset is debited to the contract in which they are used. When contract is completed or the plant is no long required it may be sold at site and the contract is credited with sale proceeds. If it is not sold the contract is credited with depreciated value. This method has a drawback that the debit side is unnecessarily inflated with the plant value and cost of contract at first sight appears to be very high. In order to overcome this problem, the difference between the original cost at commencement and depreciated value at the end of the period is obtained and is charged to the contract concerned as plant depreciation.

- (b) When plant is sent to the contract site only for short time the revaluation method just described is not satisfactory, and it is usual to charge the contract for the use on a daily or hourly basis.
- 5) **Sub Contracts:** Sub-contract costs are also debited to the Contract Account.
- 6) **Extra Work:** this forms a separate charge and where the amount involved is large, a subsidiary contract is generally entered into with the contractee.
- 7) **Accrued Charges:** all accrued charges should be debited to the contracts concerned at the end of the accounting period and carried forward in the next period.
- **Recording of Value of Profit of Contract:**
- (1) **Certificate of Work Done:** In large contracts it is usual for the contractor to obtain sums, time to time from the contractee. As the time proceeds the surveyor appointed by the contractee issues certificates to the effect that so much portion is completed. The contractor will get money according to this certificate. In some cases the terms of contract provide that the whole amount covered by the surveyor's certificate will not be paid, but a certain portion thereof shall be retained by the contractee called as retention money. On receipt of each certificate any one of the following accounting methods may be adopted:
- (a) Credits the appropriate contract accounts with the value mentioned in the certificate and debit the personal account of the contractee. Cash received is credited to the Contractor's A/c and the balance is shown as debtor representing retention money.
- (b) Alternatively, the contract account is credited with the value of certificate and the contractee account is debited with the amount payable immediately and a Special Retention Money account is debited with the amount so retained.
- (2) **Profit on Uncompleted Contracts:** Where a contract is large enough to extend over years it is usual to credit a part of the profit to the P&L account each year. If any loss is detected the whole of the loss so detected should be debited to P&L account. Unless a portion of the profit on incomplete contract is taken, the accounts may show low profits in years when no major contract is completed and exceptionally high profits in the year in which contract is completed. In

these circumstances it is prudent to transfer a conservative part of the estimated profit on large contracts at the end of the year.

The determination of the amount of profit and proportion of profit to be taken to P&L account depends upon the practice and circumstances of the case. The rules may be summarized as follows,

- A. When work of contract has not been reasonably advanced. No profit is taken into account.
- B. When work on contract has been reasonably advanced and covered by contractees certificate. In this case the notional profit is ascertained by deducting the cost if contract covered by surveyors certificate from the value of contract certified by surveyor. A portion of this profit is taken to P&L account and the balace is carried forward in the same contract as profit in suspense as a provision against future losses, increase in cost and other contingencies. The amount of profit to be credited to P&L account is ascertained from this popular formula:

$$\frac{2}{3} \times \text{Notional Profit} \times \frac{\text{Cash Received}}{\text{Work Certified}}$$

Illustration:

Illustration No. 1:

From the following amount suggest the amount of profit that may be taken on Contract X which has been completed nearly 70%:

₹

Total cost of contract to date	383000
Cost of contract not yet certified	23000
Value of contract certified	420000
Cash received to date	378000

Solution:

As the contract has reasonably advanced but not complete, the following formula may be used :

$$\frac{2}{3} \times \text{Notional Profit} \times \frac{\text{Cash Received}}{\text{Work Certified}}$$

Now, value of contract certified to date	₹ 420000
Cost of contract certified i.e. [(3,83,000-23,000)]	₹ 360000
Notional profit	₹ 60000

(cost of contract certified = total cost of contract to date – cost of contract not yet certified = ₹ 383000 – ₹ 23000 = ₹ 360000)

$$\frac{2}{3} \times 60000 \times \frac{378000}{420000} = ₹ 36000$$

C. Where the Contract is almost Complete: In this case the notional profit is determined by deducting the aggregate of costs to date and additional expenditure to complete the contract from the contract price. A proportion of this estimated total profit is credited to P&L account. This proportion is ascertained by adopting any one of the following formula :

- (a) Estimated total profit $\times \frac{\text{Value of work certified}}{\text{Contract price}}$
- (b) Estimated total profit $\times \frac{\text{Value of work certified}}{\text{Contract price}} \times \frac{\text{Cash received}}{\text{Work certified}}$
- (c) Estimated total profit $\times \frac{\text{Cost of work to date}}{\text{Estimated total cost}}$
- (d) Estimated total profit $\times \frac{\text{Cost of work to date}}{\text{Estimated total cost}} \times \frac{\text{Cash received}}{\text{Work certified}}$

Illustration No. 2:

From the following information suggest the profit to be taken on a contract which is 95% complete. Illustrate the different methods of computing profit and compare the profit, had it not been nearly complete.

Rs.

Total cost of contract to date	190000
Estimated additional expenditure (including Provision for contingencies)	10000
Contract price	250000
Value of contract certified	230000
Cost of work not certified	5000

Cash received

215000

Solution:

As the contract is almost complete, the calculation of profit may be made as follows,

Estimated profit	₹
Contract price	250000
Estimated total expenditure	200000
Estimated total profit	<u>50000</u>

$$(a) \text{ Estimated total profit } \times \frac{\text{Value of work certified}}{\text{Contract price}}$$

$$= 50000 \times \frac{230000}{250000} = ₹ 46000$$

$$(b) \text{ Estimated total profit } \times \frac{\text{Value of work certified}}{\text{Contract price}} \times \frac{\text{Cash received}}{\text{Work certified}}$$

$$= 50000 \times \frac{230000}{250000} \times \frac{215000}{230000} = ₹ 43000$$

$$(c) \text{ Estimated total profit } \times \frac{\text{Cost of work to date}}{\text{Estimated total cost}}$$

$$= 50000 \times \frac{190000}{200000} = ₹ 47500$$

$$(d) \text{ Estimated total profit } \times \frac{\text{Cost of work to date}}{\text{Estimated total cost}} \times \frac{\text{Cash received}}{\text{Work certified}}$$

$$= 50000 \times \frac{190000}{200000} \times \frac{215000}{230000} = ₹ 44402 \text{ (approx)}$$

Assuming the contract has reasonably advanced but not almost complete, the computation of profit to be taken as follows:

	₹
Value of contract certified	230000
Cost of contract certified i.e. ₹ 1,90,000 – ₹ 5,000	<u>185000</u>
Notional profit	<u>45000</u>

$$\text{Profit to be taken to P\&L a/c} = \frac{2}{3} \times 45000 \times \frac{215000}{230000} = ₹ 28043 \text{ (approx)}$$

- (3) **Valuation of work in progress:** the best way of finding out amount of work in progress for Balance sheet purpose is to add profit taken to P&L a/c to cost of contract to date and from this aggregate cash received is deducted. If there is a loss in a contract the loss should be deducted from cost of contract to date and from the amount thus arrived at cash received is deducted. This balance represents work in progress.

➤ **Cost Plus Contract, Target Price Contract and Escalator Clause:**

Where the probable cost of contract cannot be computed in advance with a reasonable degree of accuracy, a cost-plus contract is generally adopted whereby the contractor receives his total costs plus a profit, which may be a percentage of cost or fixed by reference to a scale which is definitely related to total cost. Such cost plus or lime and line contracts are undertaken for production of special articles not usually manufactured, e.g, production of newly designed aircraft component, or in case of urgent repair of ships, vehicles, power house etc, or in case of constructions during war time. From the manufacturers point of view, this type of contract protects him from the risk of fluctuations in market price of material, labour and other services. In order to avoid disputes in future, manufacturer must settle the admissible costs such as, supervision, fixed expenses and losses, such as allowances for scrap, wastage, normal loss etc. Moreover, it provides for the stipulations as to documents to be put in evidence to prove the claim of the contractor and steps to be taken for reconciliation of difference of opinion between the contractor and contractee as regards cost ascertainment. The customer usually reserves the right of cost audit but he does not mind to pay more if there is genuine rise in cost. This contract ensures that price paid will depend on cost rather than on arbitrary commitment to a specific price. However, this system puts a premium on inefficiency and there is no incentive to reduce cost. A variation of this type of costing is target costing whereby the contractor receives an agreed sum of profit over his predetermined costs. In addition, a figure is agreed as the target figure, and if actual costs are below this target the contractor is also entitled to a bonus which is a proportion of savings thus made. In order to avoid the element of risk from both sides there may be an escalator clause in the contract providing for change in the price of contract due to the change in the price of raw materials and labour or change in the utilization of factors of production. Thus, in a contract with transport undertaking, the price per ton mile will increase or decrease for each rise or fall of price of petrol by 10% of the prevailing

price. Here the contractor has to produce sufficient proof of excess cost before the customer agrees to re-imburse such costs.

Illustration No. 3:

Construction Ltd is engaged on two contracts D & E during the year. The following particulars are obtained at the year-end:

	Contract D	Contract E
Date of commencement	April 1 ₹	September 1 ₹
Contract price	600000	500000
Materials delivered direct to site	120000	50000
Materials issued from store	40000	10000
Materials returned to store	4000	2000
Materials on site December 31	22000	8000
Direct labour payments	140000	35000
Direct expense	60000	30000
Architects' fees	2000	1000
Establishment fees	25000	7000
Plant installed at cost	80000	70000
Value of plant December 31	65000	64000
Accrued wages December 31	10000	7000
Accrued expenses December 31	6000	5000
Cost of contract not yet certified	23000	10000
Value of contract certified by architect	420000	135000
Cash received from contractee	378000	125000

During the period, material amounting to ₹ 9000 has been transferred from contract D to contract E.

You are required to show;

- contract accounts, contractee's accounts
- Extract from the balance sheet as at December 31, clearly showing the calculation of work in progress.

Solution:**Contract D account**

Dr.

Cr.

Particular	₹	Particular	₹
To Materials direct	120000	By Materials returned to stores	4000
To Materials ex store	40000	By Materials transferred to Contract E	9000
To Wages paid	140000	By Stock of materials c/d	22000
To Direct expenses	60000	By Cost of contract c/d	383000
To Plant depreciation	15000		
To Architects fees	2000		
To Establishment charges	25000		
To Wages accrued, c/d	10000		
To Direct expenses accrued, c/d	6000		
	418000		418000
To Cost of contract b/d	383000	By Value of contract certified	420000
To P&L a/c profit taken	36000	By Cost of contract not yet certified c/d	23000
To Profit in suspense a/c c/d	24000		
	443000		443000
To Stock of materials b/d	22000	By Wages accrued b/d	10000
To Cost of contract not yet Certified b/d	23000	By Direct expenses accrued b/d	6000
		By Profit in suspense b/d	24000

Contractee Account (D)

Dr.

Cr.

Particular	₹	Particular	₹
To Value of work certified	420000	By Cash	378000
		By Balance c/d	42000
	420000		420000
To Balance b/d	42000		

Contractee account E

Dr.

Cr.

Particular	₹	Particular	₹
To Value of work certified	135000	By Cash	125000
		By Balance c/d	10000
	135000		420000
To Balance b/d	10000		

Dr.

Contract E account

Cr.

Particular	₹	Particular	₹
To Materials, direct	50000	By Materials returned to store	2000
To Materials, ex-store	10000	By Stock of materials c/d	8000
To Materials from contract D	9000	By Cost of contract c/d	150000
To Wages paid	35000		
To Direct expenses	30000		
To Plant depreciation	6000		

To Architects fees	1000		
To Establishment charges	7000		
To Wages accrued c/d	7000		
To Expenses accrued c/d	5000		
	160000		160000
To Cost of contract b/d	150000	By Value of contract certified	135000
		By Cost of contract not yet certified c/d	10000
		By P&L a/c—loss on Contract	5000
	150000		150000
To Stock of materials b/d	8000	By Wages accrued b/d	7000
To Cost not yet certified b/d	10000	By Expenses accrued b/d	5000

Balance sheet as at December 31 (extract only for contracts)

Liabilities	₹	₹	Assets	₹	₹
P&L a/c			Fixed assets:		
Profit of D	36000		Plant at cost	150000	
Loss of E	5000		Depreciation	21000	
		31000			129000
Sundry creditors			Current assets:		
Wages accrued	17000		Stock of materials	30000	
Expenses accrued	11000		Work in progress	61000	
		28000			91000

Calculation of work in progress		
Contract D-	₹	₹
Cost of contract to date	383000	
Add profit taken	36000	419000
Less cash received	378000	
		41000
Contract E.		
Cost of contract to date	150000	
Less loss incurred	5000	145000
Less cash received	125000	20000
Total work in progress		61000

Note: profit calculation of contract D:

$$\frac{2}{3} \times \text{Notional profit} \times \frac{\text{cash received}}{\text{value of work certified}}$$

$$= \frac{2}{3} \times 60000 \times \frac{378000}{420000} = \text{Rs. } 36000$$

Note: the method described just now is very popular and is helpful to students in answering questions. However, the following modified method is also extensively used by many contractors:

Illustration No. 4:

Assuming the same figures in respect of contract D of the problem above, prepare the contract accounts to show the position at December 31, retaining an adequate provision against possible losses before final acceptance of the contract.

Solution:

Contract D account

Dr.

Cr.

Particulars	₹	Particulars	₹
To Materials, direct	120000	By Materials returned to store	4000
To Materials, ex-store	40000	By Materials tfd to contract E	9000
To Wages paid	140000	By Stock of materials c/d	22000

To Direct expenses	60000	By Cost of contract not certified c/d	23000
To Plant depreciation	15000	By cost of contract certified up to date c/d	360000
	418000		418000
To Cost of contract certified b/d	360000	By Wages accrued b/d	10000
To Cost of contract not certified b/d	23000	By Direct expenses accrued b/d	6000
To Stock of material b/d	22000		

Contract D certificate account

Dr.

Cr.

Particulars	₹	Particulars	₹
To Balance c/d	420000	By Certificates up to date	420000
	420000		420000

Contract D retentions account

Dr.

Cr.

Particulars	₹	Particulars	₹
To Certificate account	42000	By Certificates up to date	420000

Contractee account (D)

Dr.

Cr.

Particulars	₹	Particulars	₹
To Certificate account	378000	By Cash at bank	378000

Contract D profit provision account

Dr.

Cr.

Particulars	₹	Particulars	₹
To Transfer to P&L a/c	36000	By Provision c/d	36000
	36000		36000
Balance b/d	36000		

N.B. the balance sheet position will remain the same.

Illustration No. 5 : The BBA Construction Company undertakes large contracts. The following particulars related to contract No. 125 carried out during the year ended on 31st March, 2015.

Particulars	₹	Particulars	₹
Work certified by architect	1,43,000	Wages accrued on 31 st March 2015	1,8000
Cost of work not certified	3,400	Direct expenditure	2,400
Plant installed at site	11,300	Materials on hand on 31 st March 2015	1,400
Value of plant on 31 st March 2015	8,200	Materials returned to store	400
Materials sent to site	64,500	Direct expenditure accrued on 31 st March 2015	200
Labour	54,800	Contract price	2,00,000
Establishment charge	3,250	Cash received from contractee	1,30,000

Prepare a Contract Account for the period ending 31st March 2015 and find out the profit. It was decided to transfer 2/3 of the profit on cash basis to Profit and Loss Account.

Solution :**Contract No. 125 Account for the year ending 31st March, 2015**

Particulars	₹	Particulars	₹
To Materials sent to site	64,500	By Materials returned	400
To Labour	54,800	By Materials in hand	1,400
To Establishment charge	3,250	By Work-in-Progress:	
To Direct expenses	2,400	Certified	1,43,000
To Wages accrued	1,800	Uncertified	3,400
To Direct expenses accrued	200	By Plant at site	8,200
To Plant at site	11,300		
To Notional Profit c/d	18,150		
	1,56,400		1,56,400
To P & L A/c	11,000	By Notional Profit b/d	18,150
(18,150 x 2/3) x			
(1,30,000/1,43,000)			
To Reserve	7,150		
	18,150		18,150

Illustration No. 6 :

Simplex Construction Ltd. Agreed to take a contract for construction of a bridge on 01.07.2017. The contract price was ₹ 5,00,000. The company incurred following expenses up to 31.12.2017.

Particulars	₹
Materials consumed	1,10,000
Wages	40,000
Direct expenses	20,000
Plant purchased on 01.07.2017	1,00,000
Materials in hand on 31.12.2017	5,000

Additional information :

- * Depreciation on plant @10% per annum.
- * Charge other works expenses @20% of wages & office expenses @10% of works cost.
- * The amount certified by the contractee's engineer was ₹ 3,00,000, retention money being 20% of the certified value.

Prepare Contract A/c showing the amount of profit that the company can reasonably take to its P/L A/c.

Solution :**Simplex Construction Ltd.****Contract No. 126 Account for the year ending 31st March, 2015**

Dr.

Cr.

Particulars	₹	Particulars	₹
31.12.2017		31.12.2017	
To Materials consumed	1,10,000	By Work-in-progress c/d	3,00,000
To wages	40,000	(value of work certified)	
To direct expenses	20,000		
To depreciation on plant (6 months)	5,000		
To other works expenses (20% on wages)	8,000		
Works Cost	1,83,000		
To office expenses (10% on works cost)	18,300		
	2,01,300		
To Profit & Loss A/c (profit transferred) (WN:1)	52,640		
To Work-in-progress c/d (provision)	46,060		
	3,00,000		3,00,000

01.01.2018			
To Work-in-progress b/d:			
Value of certified work 3,00,000			
Less : Provision 46,060	2,53,940		

Working Notes:

1. Proportion of profit to be transferred to Profit & Loss A/c:

Accounting profit : ₹ (3,00,000 – 2,01,300) = ₹ 98,700

Profit on realized basis : 80% of ₹ 98,700 = ₹ 78,960

Proportion to be transferred to P/L A/c : 2/3 of Rs. 78,960 = ₹ 52,640

Illustration No. 7 :

S Ltd. Furnished the following information in respect of incomplete contract as on 31.3.2016.

Particulars	Contract A ₹	Contract B ₹
Contract Price	2,40,000	1,50,000
Work certified	2,16,000	1,00,000
Estimated cost of completion of contract	2,10,000	1,20,000
Cash received	1,16,000	80,000
Uncertified Work	10,000	7,000
Cost of contract (expenditure incurred up to 31.3.16)	1,80,000	95,000

Calculate the profit to be carried to P/L A/c for the year ended 31.3.16

Solution :

P Ltd.

Contract No. 127 Account for the year ending 31st March, 2015

Dr.

Cr.

Particulars	A	B	Particulars	A	B
To cost of contract	1,80,000	95,000	By works certified	2,16,000	1,00,000
To Notional profit c/d	46,000	12,000	By works uncertified	10,000	7,000
	2,26,000	1,07,000		2,26,000	1,07,000
To P/L A/c (WN:1)	22,716	6,400	By Notional profit b/d	46,000	12,000
To Reserve	23,284	5,600			
	46,000	12,000		46,000	12,000

Working Notes :

- Proportion of profit to be transferred to Profit & Loss A/c:

$$\text{Accounting Profit} \times \frac{(\text{cash received})}{(\text{work certified})} \times \frac{2}{3}$$

Contract A :

$$46,000 \times \frac{1,60,000}{2,16,000} \times \frac{2}{3} = \text{Rs. } 22,716$$

Contract B :

$$12,000 \times \frac{80,000}{1,00,000} \times \frac{2}{3} = \text{Rs. } 6,400$$

Illustration 8 :

The following was the expenditure on a contract for ₹ 6,00,000

Particulars	Amount
Material	1,20,000
Wages	1,64,000

Plant	20,000
Overheads	8,600

Cash received on account of the contract was ₹ 2,40,000 being 80% of the work certified. The Value of material in hand was ₹ 10,000. The plant has undergone 20% depreciation.

Solution :

Dr.		Contract Account		Cr.	
Particulars	Amount ₹	Particulars	Amount ₹		
To Materials	1,20,000	By Material in hand	10,000		
To Wages	1,64,000	By Plant on hand	16,000		
To Plant	20,000	By Work-in-Progress			
To Overheads	8,600	Work Certified	3,00,000		
To Notional Profit	13,400	(2,40,000x100/80)			
	3,26,000		3,26,000		
To Profit and Loss A/c	7,147	By Notional Profit b/d	13,400		
To Work-in-Progress	6,253				
	13,400		13,400		

Illustration 9 :

The following is the condensed record of the transactions as on 31st December 2014 relating to special contract completed during the year.

Material bought from market	₹ 1,500
Materials issued from the stores	₹ 500
Wages	₹ 2,440
Direct expenses	₹ 294
Work on cost 25% of direct wages	

Office on cost 10% of prime cost

Contract price ₹ 6,000

You are required to prepare a contract account keeping in view that the material returned amounted to ₹ 240.

Solution :

Dr.		Contract Account		Cr.	
Particulars	Amount	Particulars	Amount		
	₹		₹		
To Materials		By Material Returned	240		
Purchased 1,500		By Contractee's Account	6,000		
Issued from store <u>500</u>	2,000				
To Wages	2,440				
To Direct Expenses	294				
To Work on Cost	610				
(2,440x25/100)					
To Office on Cost	450				
(10% of ₹ 4,494)					
To Profit and Loss A/c	446				
	6,240		6,240		

Note:

1. Prime cost = (1,500 + 500 + 2,440 + 294) = -240 = Rs. 4,494
2. Since the contract has been completed in the first year itself hence, no reserve is required. The entire excess of credit in contract account called Notional Profit has been credited to the Profit & Loss A/c.

➤ **Check Your Progress:**

A. Multiple Choice Questions:

1. Contract Costing is used in
 - a. Paint Industry
 - b. Chemical Industry

- c. Road Construction
 - d. Refinery.
- 2. In contract costing; costs are accumulated____
 - a. Yearwise
 - b. Quarterwise
 - c. Halfyearly
 - d. Contractwise.
- 3. Contract Costing while assessing the profit on incomplete uses the concept of
 - a. Total Profit
 - b. Super Profit
 - c. Notional Profit
 - d. Allocated Profit.
- 4. Contract Costing has its root in
 - a. Job Costing
 - b. Process Costing
 - c. Unit Costing
 - d. Target Costing.
- 5. Contracts with escalation clause become a necessity in
 - a. Normal times
 - b. Political uncertainty
 - c. Routine Activities
 - d. Construction Industry.

B. State Whether True or False:

- 1. All contracts are signed with an escalation clause.
- 2. Usually, all contracts conclude within one year.
- 3. Retention Money is an essential feature of a Contract.
- 4. When work on a contract has not substantially advanced, no amount of unrealized profit is credited to the Profit & Loss Account.
- 5. Notional Profit is the difference between the sum total of Work Completed & Certified +Work Completed but uncertified; and the Cost of Contract.

C. Fill in the Blanks:

- 1. Ship Builders use the concept of ____costing in calculations of costs.
- 2. To protect the Contractor from unexpected increase in costs, contracts have an ____clause.
- 3. Return of material is shown on the ____side of the Contract Account.

4. Valuation of WIP becomes a necessity in case of _____ Contracts.
5. An architect's certificate is available in respect of _____.

D. Match the following:

Column A	Column B
1. Contract Costing.	a. Control of Costs.
2. Target Costing.	b. To guarantee quality of work.
3. Work In Process	c. Balance Sheet.
4. Retention Money.	d. Payment towards contract.
5. Contractee.	e. Construction of Houses.

4.3 Summary:

From the overall discussion it is understood that the contract or work order wherein work is executed as per customer's specific requirements. Contract Costing approaches the problems faced by contractors in the execution of contracts which spill over more than on accounting period. Contract means a big job in which work is done at site and not in factory premises. The cost of each contract is ascertained. Thus, in this method of costing, each contract is a cost unit and an account is opened for each contract in the books of contractor to ascertain profit/loss thereon. Moreover, it is understand that the contract costing, also known as terminal costing or contract costing, is a variation of the job costing technique used by companies that perform building or other types of construction work. Typically, the jobs are the agreements made with the clients. Contract costing is considerably easier to use than a task costing system since a firm may not manage several of these contracts at once. The fundamental concepts employed in contract costing are the same as those in job costing, with the exception that they have been tailored to the unique specifications of the contracts. Thus, it is also stated that, contract costing is one of the methods of job costing, and it is also called terminal costing. In this regard each contract is given a number and the records are maintained separately. This method is generally used by builders, construction firms, contractors etc.

4.4 Terms to Remember:

- **Contract Costing:** That form of specific order costing which applies where work is undertaken as per customer's special requirement.
- **Notional Profit:** it is an apparent profit.
- **Escalation:** increase/rise in an activity
- **Target Costing:** a bench mark for completion of a contract.
- **Retention Money:** amount kept towards assurance of quality of work executed.
- **Cost plus Contracts:** a condition which guarantees a contractor a fare consideration.

4.5 Answers to Check Your Progress:

- A. Ans: c, d, c, a, b
- B. Ans.1. False, 2. False, 3. True, 4. True, 5. True
- C. Ans. 1. Contract, 2. Escalation, 3. Credit, 4. Incomplete, 5. Work Completed
- D. Ans.1-5, 2-1, 3-3, 4-2, 5-4

4.6 Exercise:

1. What is contract costing? Explain briefly the distinguishing features of contract costing.
2. Explain the term work certified.
3. Write short notes on:
 - (a) Cost plus contract
 - (b) Work certified
 - (c) Work uncertified
4. Contracts have their basis in Job Costing. Explain this sentence and give the essential features of Contract Costing.
5. A firm of Builders, carrying out large contracts kept in contract ledger, separate accounts for each contract on 30th June, 2017, the following were shown as being the expenditure in connection with Contract No. 555.

Materials purchased ₹ 1,16,126 Materials issued from stores ₹ 19,570 Plant, which has been used on other contracts ₹ 25,046 Additional plant ₹ 7,220 Wages ₹ 1,47,268 Direct expenses ₹ 4,052 Proportionate establishment expenses ₹ 17,440.

The contract which had commenced on 1st February, 2017 was for ₹ 6,00,000 and the amount certified by the Architect, after deduction of 20% retention money, was ₹ 2,41,600 the work being certified on 30th June, 2017. The materials on site were ₹ 19,716. A contract plant ledger was also kept in which depreciation was dealt with monthly the amount debited in respect of that account is ₹ 2260. Prepare Contract Account showing profit on the contract.

6. A contractor commenced the work on a particular contract on 1st April, 2016 he usually closes his books of accounts for the year on 31st December of each year. The following information is revealed from his costing records on 31st December, 2016.

Materials sent to site ₹ 43,000 Jr. Engineer ₹ 12,620 Labour ₹ 1,00,220 A machine costing ₹ 30,000 remained in use on site for 1/5th of year. Its working life was estimated at 5 years and scrap value at ₹ 2,000 A supervisor is paid ₹ 2,000 per month and had devoted one half of his time on the contract. All other expenses were ₹ 14,000 the materials on site were ₹ 2,500. The contract price was ₹ 4,00,000. On 31st December, 2016 2/3rd of the contract was completed however, the architect gave certificate only for ₹ 2,00,000. On which 80% was paid. Prepare Contract Account.

12. XY Ltd undertook a contract, the following was the expenditure on a contract for ₹ 3,00,000

Material issued to contract	₹ 51,000
Plant issued for contract	₹ 15,000
Wages	₹ 81,000
Other expenses	₹ 5,000

Cash received on account of contract up to 31st March, 2014 amounted to ₹ 1,28,000 being 80% of work certified. Of the plant and material charged to the contract plant costing ₹ 1,500 and material costing ₹ 2,000 were lost. On 1st

March 2014, plant which cost ₹ 1,000 was returned to the store, the cost of work done but not certified was ₹ 1,500 and material costing ₹ 1,250 were in hand on site. Provide 10% depreciation on plant, reserve 1/3 of profit received and prepare contract account from the above particulars.

13. Mr. A has undertaken several contract works. He maintains a separate record for each contract. From the records for the year ending 31-12-14, prepare contract account for Contract No. 50 and find the amount transferred to profit and loss account.

	₹
Direct purchase of material	90,000
Material issued from stores	25,000
Wages	1,22,000
Direct expenses	12,000
Machinery purchased	80,000
Establishment charges	27,000

The contract price was ₹ 7,50,000. Cash received up to 31-12-2008 was ₹ 3,00,000 which is 80% of work certified. Material at site ₹ 8,000. Depreciation for Machine ₹ 8,000.

4.7 References for Further Study:

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