



S.Y.B.COM.
(ACCOUNTING & FINANCE)
SEMESTER - III

COST ACCOUNTING
(METHODS OF COSTING) II

SUBJECT CODE : UA_FFIII.2

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September 2022, Print - 1

Published by : Director,
Institute of Distance and Open Learning ,
University of Mumbai,
Vidyanagari, Mumbai - 400 098.

DTP Composed & Printed by : Mumbai University Press
Vidyanagari, Santacruz (E), Mumbai

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***Revised Syllabus of Courses of B.Com. (Accounting and Finance)
Programme at Semester III
with Effect from the Academic Year 2022-2023***

1. Elective Courses (EC)

Cost Accounting (Methods of Costing) – II

Modules at a Glance

Sr. No.	Modules	No. of Lectures
1	Classification of Costs And Cost Sheets	20
2	Reconciliation of Cost and Financial Accounts	10
3	Contract Costing	15
4	Process Costing	15
	Total	60

Sr. No.	Modules / Units
1	Classification of Costs and Cost Sheet
	Classification of costs, Cost of Sales, Cost Centre, Cost Unit, Profit Centre and Investment Centre Cost Sheet, Total Costs and Unit Costs, Different Costs for different purpose Problems on preparation of cost sheet & Estimated Cost sheet
2	Reconciliation of cost and financial accounts
	Practical problems based on reconciliation of cost and Financial accounts
3	Contract Costing
	Progress payments, Retention money, Contract accounts, Accounting for material, Accounting for Tax deducted at source by the contractee, Accounting for plant used in a contract, treatment of profit on incomplete contracts, Contract profit and Balance sheet entries. Escalation clause, practical problems
4	Process Costing
	Process loss, Abnormal gains and losses, Joint products and by products. Excluding Equivalent units, Inter-process profit Practical problems Process Costing and joint and by products

INTRODUCTION TO COST ACCOUNTING

Unit structure

- 1.0 Objectives
- 1.1 Introduction
- 1.2 Meaning of Cost, Costing and Cost Accounting
- 1.3 Objectives of Cost Accounting
- 1.4 Cost Centre and Cost Units
- 1.5 Classification of Cost
- 1.6 Elements of Cost
- 1.7 Summary
- 1.8 Exercise

1.0 OBJECTIVES

After studying this unit students will be able to:

- Understand the need of Cost Accounting
- Know the meaning of Cost, Costing and Cost Accounting
- Explain the objectives of Cost Accounting
- Understand the classification of Cost
- Discuss about the Elements of Cost
- Know the methods of Costing

1.1 INTRODUCTION

Cost Accounting is the system of accounting which is concerned with determination of costs of doing something which can be manufacturing or rendering service or even conducting any activity or function. The objective of Cost Accounting is to render detailed and useful information for guidance to Management.

Financial accounting is developed over the time to record, summarise and present the financial transaction or events which can be expressed in terms of money. This function was primarily concerned with record keeping, leading to preparation of Profit and Loss Account and Balance Sheet. The information obtained through financial statements is useful to the Management or Owner in several respects. However, the information provided by financial

accounting is not sufficient for several purposes of decision making in many areas such as : determining output level, determining product selection – addition or dropping or changing product combination in the case of multi product company, determining or revising prices of products, whether Profit earned is optimum as compared with competitors and in comparison to earlier years. The need of data for such details lead to the development of Cost Accountancy.

1.2 MEANING OF COST, COSTING AND COST ACCOUNTING

1.2.1 Cost :

Institute of Cost and Works Accountants of India, defines cost as “measurement, in monetary terms, of the amount of resources used for the purpose of production of goods or rendering services”.

Thus the term cost means the amount of expenditure, actual or notional incurred or attributable to a given thing. It can be regarded as the price paid for attaining the objective. For e.g. Material cost is the price of materials acquired for manufacturing a product.

1.2.2 Costing :

The term costing has been defined as “the techniques and processes of ascertainment of costs. **Whelden** has defined costing as, “the classifying recording and appropriate allocation of expenditure for the determination of costs the relation of these costs to sale value and the ascertainment of profitability.”

Therefore costing involves the following steps.

1. Ascertaining and Collecting of Costs
2. Analysis or Classification of Costs
3. Allocating total costs to a particular thing i.e. product, a contract or a process.

Thus costing simply means cost finding by any process or technique.

1.2.3 Cost Accounting :

Cost Accounting is a formal system of accounting by means of which cost of products or service, are ascertained and controlled.

Whelden defines Cost Accounting as, “Classifying, recording and appropriate allocation of expenditure for determination of costs of products or services and for the presentation of suitably arranged data for the purpose of control and guidance of management.”

Therefore, Cost Accounting is the application of costing principles, methods and techniques in the ascertainment of costs and analysis of savings or / and excesses as compared with previous experience or with standards. It provides, detailed cost information to various levels of management for efficient performance of their functions. The information supplied by Cost Accounting as a tool of management for making optimum use of scarce resources and ultimately add to the profitability of business.

1.3 OBJECTIVES OF COST ACCOUNTING

Objectives of Cost Accounting are as follows :

- 1) **To Ascertain the Cost** : To ascertain the cost of product or a services reveled and enable measurement of profit by proper valuation of inventory.
- 2) **To Analyse Costs** : To analysis costs or to classify the expenses under different heads of accounts viz. material, labour, expenses etc.
- 3) **To Allocate and Apportion the Costs** : To allocate or charge the direct expenses or specific costs such as Raw Material, Labour to particular product, contract or process and to distribute common expenses to each product, contract or process on a suitable basis.
- 4) **Cost Reporting** : Cost Reporting or presentation includes :
 - a) What to report i.e. what is the nature of information to be presented?
 - b) Whom to Report i.e. to whom the report is to be addressed.
 - c) When to Report i.e. when the report is to be presented i.e. Daily weekly monthly yearly etc.
 - d) How to Report i.e. in what format the report is to be presented.
- 5) **To Assist the Management** : Cost Accounting assist the management in:
 - a) Indicating to the management any inefficiencies and extent of various forms of waste of Raw Material, Time, Expenses etc.
 - b) Fixing of selling price.
 - c) Providing information to enable management to take decision of various types.

- d) Controlling Inventory of Raw Material, goods in process, finished goods, spares and consumables etc.
- 6) Cost Control** : Cost Accounting assist the management in cost control. Cost control includes the following stages.
- a) Setting up of targets of cast and production for each period.
 - b) Measuring the actual figures of performance relating to cost, production etc. for the period concerned.
 - c) The figures of actual performance are to be compared with the targets to find out the variation.
 - d) Analysing the variance, whether favourable or adverse.
 - e) Immediate action has to be taken in case of adverse variation.
- 8) Optimum Product Mix** : Advise the management in deciding optimum product mix merits and demerits of alterative courses of action viz. make or buy decisions, introduction or Automation mechanization, rationalization, system of production etc.
- 9) Future Policies** : Advise management on future policies regarding Expansion, growth, capital investment, etc.

1.4 COST CENTRE AND COST UNITS

1.4.1 Cost Centre :

It is a location, person or item of equipment for which cost may be ascertained and used for the purpose of cost control. It is a convenient unit of the organisation for which cost may be ascertained. The main purpose of ascertainment of cost is to control the cost and fill up the responsibility of the person who is in charge of the cost centre.

- **Types of cost centers :**

- I. Personal Cost Centre :**

It consists of a person or group of persons.
e.g. machine operator, salesmen, etc.

- II. Impersonal Cost Centre :**

It consists of a location or an item of equipment or group of these. E.g. Factory, Machine etc.

- III. Operational Cost Centre :**

This consists of machines or persons carrying on similar operations.

IV. Process Cost Centre :

This consists of a continuous sequence of operation or specific operations.

V. Production Cost Centre :

This is the centre where actual production takes place or these include, those departments that are directly engaged in manufacturing activity and contribute to the content and form of finished product.

e.g. Cutting, Assembly and Finishing Departments etc.

VI. Service Cost Centre :

This is the Centre which renders services to production centres. These contribute to the production process in an indirect manner.

e.g. Stores department, Repairs and Maintenance department, H.R. Department, Purchase Department etc.

1.4.2 Cost unit :

It is a unit of product, service or time in terms of which cost are ascertained or expressed. It is basically, a unit of quantity of product or service in relation to which costs may be ascertained or expressed.

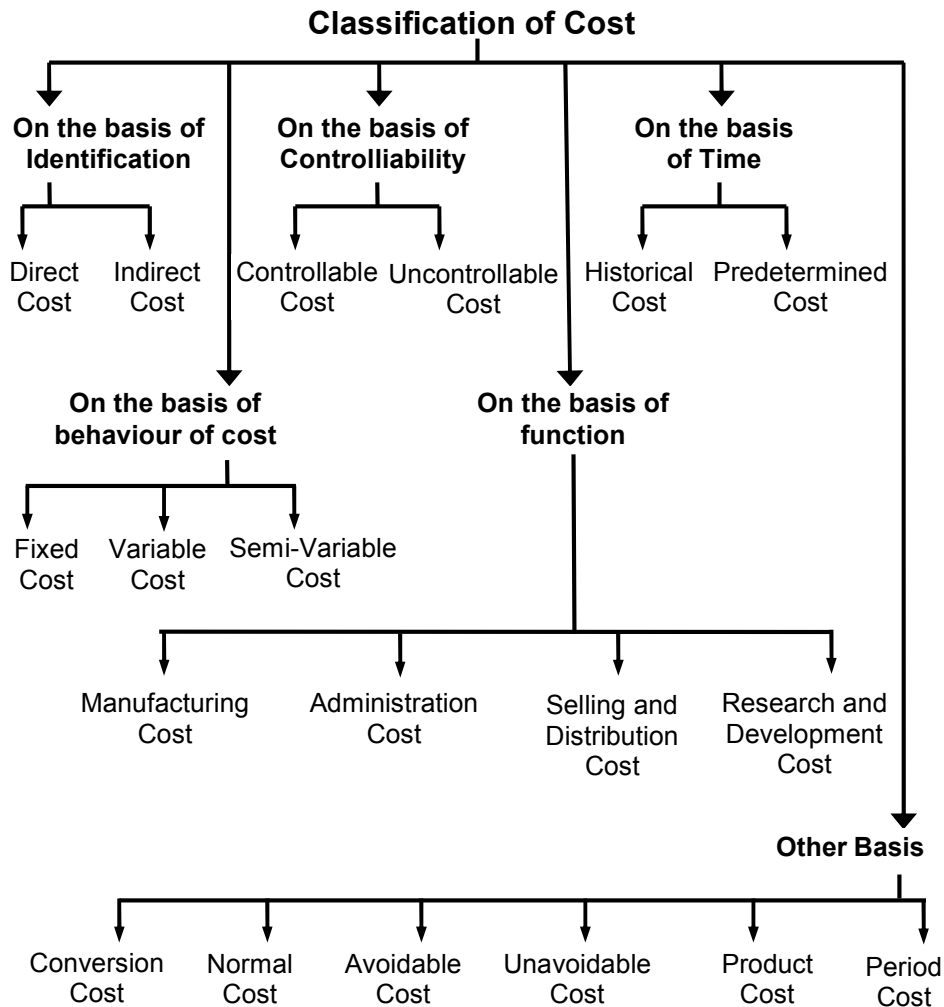
Few examples of cost unit are given below.

Name of Industry	Cost unit
Textiles	Meter, yards
Transport	Passenger km
Power	Kilowatt – hour
Paints	Litre
Iron and Steel	Tonne
Canteen	Per meal
Chemical	Litre, kilogram
Readymade Garments	Number
Petrol	Litre

1.5 CLASSIFICATION OF COST

Classification is the process of grouping costs according to their common characteristics. It is a systematic placement of like items together according to their common features. There are various ways of classifying costs, according to their common features as given below.

Chart showing classification of cost :



I On the basis of Identification :

On the basis of identification of cost with cost units or jobs or processes, costs are classified into –

1. **Direct Costs** : These are the costs which are incurred for and conveniently identified with a particular cost unit process or department. These are the expenditures which can be directly allocated to a particular job, product or an activity. E.g. Cost of Raw Material used, wages paid to labourers etc.
2. **Indirect Costs** : These are general costs and are incurred for the benefit of a number of cost units, processes or departments. These costs can not be conveniently identified with a particular cost unit or cost centre. Example : Depreciation of Machinery, Insurance, Lighting, Power, Rent of Building, Managerial Salaries, etc.

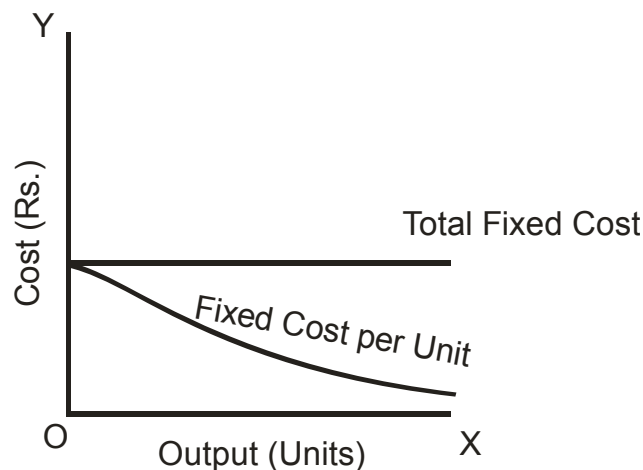
II On the basis of behaviour of Cost

Behaviour means change in cost due to change in output. Costs behave differently when the level of production rises or falls. Certain costs change in direct proportion with production level while other costs remain unchanged. As such on the basis of behaviour of cost – costs are classified into

- 1) **Fixed Costs** : It is that portion of the total cost which remain constant irrespective of output upto the capacity limit. It is the cost which does not vary with the change in the volume of activity in the short run. These costs are not affected by temporary fluctuation in the activity of an enterprise. These are also known as period costs as it is concerned with period. Rent of premises, tax and insurance, staff salaries, are the examples of fixed cost.

Characteristics of Fixed Cost are :

- a. Large in value
- b. Fixed amount within an output range
- c. Fixed cost per unit decreases with increased output
- d. Indirect Cost
- e. Lesser degree of controllability
- f. Influence Variable Cost and Working Capital



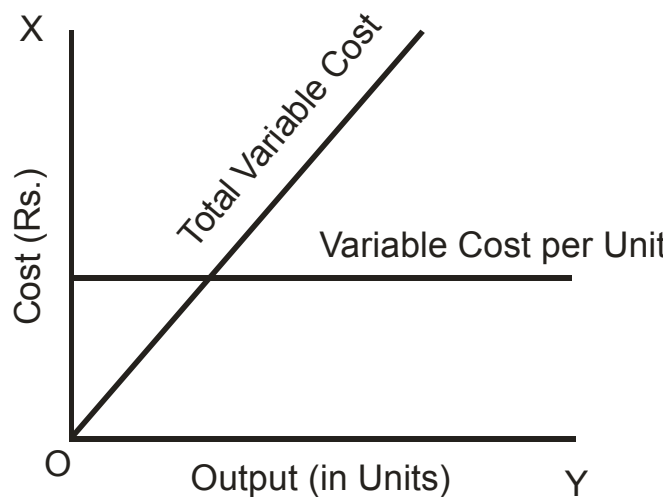
Behaviour of Fixed Cost

- 2) **Variable Cost** : It is that cost which directly vary with the volume of activity. In other words, it is a cost which changes according to the changes in the volume of output. It tends to vary in direct proportion to output. It means when the volume of output increases, total variable cost also increases when the volume of output decreases, total variable cost also decreases.

But the variable cost per unit remains same. Direct material, Direct Labour, Direct Expenses are the examples of variable costs.

Characteristics of Variable Cost are :

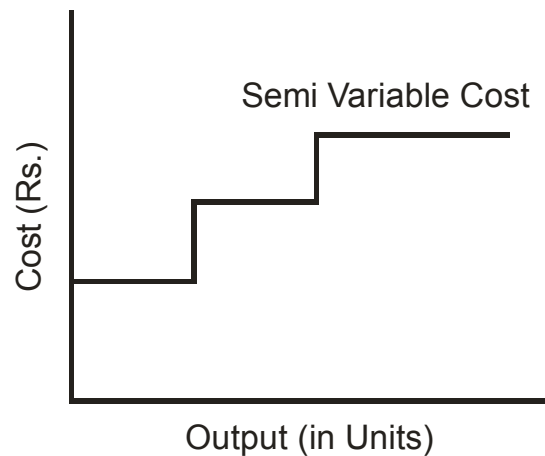
- a. Total cost changes in direct proportion to the change in total output.
- b. Cost per unit remains constant.
- c. It is quite divisible.
- d. It is identifiable with the individual cost unit.
- e. Such costs are controlled by functional manager.



Behaviour of Variable Cost

- 3) Semi-Variable Cost :** This is also referred as semi-fixed costs. These costs include both a fixed and a variable component. i.e. These are partly fixed and partly variable. They remain constant upto a certain level and registers change afterwards. These costs vary in some degree with volume but not in direct or same proportion. Such costs are fixed only in relation to specified constant condition.

For example: Repairs and maintenance of machinery, telephone charges, maintenance of building, supervision, professional tax, compensation for accidents, light and power etc.



Behaviour of Semi-Variable Cost

III. On the basis of Controllability

On the basis of controllability, costs are classified into two types :

- 1) Controllable Cost
- 2) Uncontrollable Cost

1) Controllable Cost : These are the costs which can not be influenced or controlled by the concerned cost centre or responsibility centre. These costs may be directly regulated at a given level of management authority.

2) Uncontrollable Cost : These are the costs, which can not be influenced or controlled by the action of a specific member of an enterprise. For eg. it is very difficult to control costs like factory rent, managerial salaries etc.

The important points to be noted regarding this classification. First, controllable cost can not be distinguished from non-controllable costs, without specifying the level and scope of management authority. It means cost which is uncontrollable at one level of management may be controllable at another level of management. Eg. Rent and Factory Building may be beyond control for the production department but can be controlled by the administrative department by negotiations. Secondly all costs are controllable in the long run and at the some appropriate management level.

IV On the basis of Functions

An organisation performs many functions. On the basis of functions costs can be classified as follows :

- 1) **Manufacturing Costs** : It is the cost of all items involved in the manufacturing of a product or service. It includes all direct costs and all indirect costs related to the production. It includes cost of direct materials, direct labour, direct expenses, and overhead expenses related to production. Overhead expenses, means all indirect costs involved in the production process. This is termed as factory overhead or manufacturing overheads. Eg. Salaries of staff for production department, technical supervision, Expenses of stores department, Depreciation of Plant and Machinery, Repairs and maintenance of Factory Building and Machineries etc.
- 2) **Administration Cost** : These are costs incurred for general management of an organisation. It is the cost which is incurred for formulating the policy, directing the organisation of controlling the operations. These are in the nature of indirect costs and are also termed as administrative overhead. Eg. Salaries of Administrative Staff, General Office expenses like rent, lighting, telephone, stationery, postage etc.
- 3) **Selling and Distribution Costs** : Selling costs are the indirect costs relating to selling of products or services. They include all indirect cost in sales management for the organisation. Selling costs include all expenses relating to regular sales and sales promotion activities. Examples of expenses which are included in selling costs are :
 - 1) Salaries, Commission and traveling expenses for sales personnel
 - 2) Advertisement cost
 - 3) Legal Expenses for debt realization
 - 4) Market research cost
 - 5) Show room expenses
 - 6) Discount allowed
 - 7) Sample and free gifts
 - 8) Rent on Sales room
 - 9) After sale services

Distribution costs are the costs incurred in handling a product from the time it is completed in the works until it reaches the ultimate consumer. Distribution expenses include all these expenses which are incurred in connection with making the goods available to customers. These expenses include the following.

- 1) Packing charges
- 2) Loading charges

- 3) Carriage on Sales
 - 4) Rent of warehouse
 - 5) Insurance and lighting of warehouse
 - 6) Transportation costs
 - 7) Salaries of godown keeper, driver, packing staff etc.
- 4) **Research and Development Cost** : Research and development costs are incurred to discover new ideas, processes, products by experiment. It includes the cost of the process which begins with the implementation of the decision to produce or improved product.

V On the basis of Time

On the basis of time of computation, costs are classified into historical costs and predetermined costs.

- 1) **Historical Costs** : These are the costs which are ascertained after these have been incurred. Historical costs are then nothing but actual costs. They represent the costs of actual operational performance. These costs are not available until after the completion of manufacturing operations.
- 2) **Pre determined Costs** : These are the future costs which are ascertained in advance of production on the basis of a specification of all the factors affecting cost and cost data. Predetermined costs are future costs determined in advance on the basis of standards or estimates. These costs are extensively used for the purpose of planning and control.

VI Other Basis

- 1) **Normal Cost** : Normal cost may be defined as a cost which is normally incurred on expected lines at a given level of output, in the condition in which that level of output is normally attained. This cost is a part of production.
- 2) **Abnormal Cost** : Abnormal cost is that cost which is not normally incurred at a given level of output, in the condition in which that level of output is normally attained. Such cost is over and above the normal cost and is not treated as a part of the cost of production.
- 3) **Avoidable Cost** : The cost which can be avoided under the present conditions is an avoidable cost. These are the costs which under given conditions of performance efficiency should not have been incurred. They are logically associated with some activity and situation and are ascertained by the

difference of actual cost with the happening of the situation and the normal cost. Eg. when spoilage occurs in manufacturing in excess of normal limit, the resulting cost of spoilage is avoidable cost.

- 4) Unavoidable Cost :** The cost which can not be avoidable under the present condition is an unavoidable cost. They 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.

CHECK YOUR PROGRESS

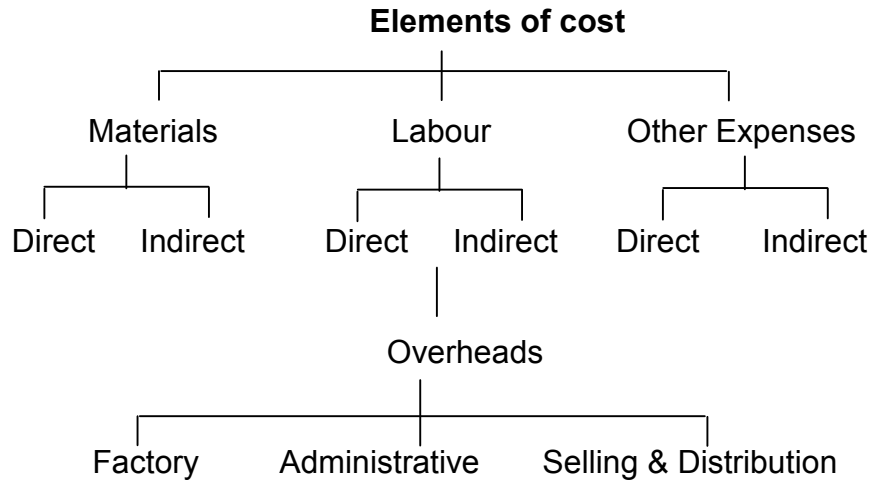
- Draw the chart showing Classification of Cost.
- Define the following terms:
 1. Costing
 2. Cost Accounting
 3. Impersonal cost center
 4. Service Cost center
 5. Direct Cost
 6. Uncontrollable cost
 7. Predetermined cost
- Give Examples:
 1. Fixed cost
 2. Variable cost
 3. Semi variable cost
 4. Manufacturing cost
 5. Administration cost
 6. Selling cost
 7. Distribution Cost

1.6 ELEMENTS OF COST

A manufacturing organisation converts raw materials into finished products. For that it employs labour and provides other facilities. While compiling production cost, amount spent on all these are to be ascertained. For this purpose, cost are primarily classified into various elements. This classification is required for accounting and control.

The elements of cost are (i) Direct material (ii) Direct labour (iii) Direct expenses and (iv) Overhead expenses.

The following chart depicts the broad headings of costs and this acts as the basis for preparing a Cost sheet.



1.6.1 Material Cost

It is the cost of material of any nature used for the purpose of production of a product or a service. Materials may be Direct Material or Indirect Material.

- **Direct material** : It is the cost of basic raw material used for manufacturing a product. Direct materials generally become a part of the finished product. No finished product can be manufactured without basic raw material. This cost is easily identifiable and chargeable to the product. For e.g. Leather in leather products, Steel in steel furniture, Cotton in textile etc. Direct material includes the following.

Examples-

- i) Material specially purchased for a specific job or process.
- ii) Materials passing from one process to another.
- iii) Consumption of materials or components manufactured in the same factory.
- iv) Primary packing materials.
- v) Freight, insurance and other transport costs, import duty, octroi duty, carriage inward, cost of storage and handling are treated as direct costs of the materials consumed.

In certain cases direct materials are used in small quantities and it will not be feasible to ascertain their costs and allocate them directly. For instance, nails used in the manufacture of chairs and tables, glue used in the manufacture of toys, thread used in stitching garments etc. In such cases cost of the total quantity consumed for the period will be treated as Indirect costs.

- **Indirect material** : It is the cost of material other than direct material which cannot be charged to the product directly. It can not be treated as part of the product. These are minor in importance. It is also known as expenses materials. It is the

material which cannot be allocated to the product but can be apportioned to the cost units.

Examples : Lubricants, Cotton waste, Grease, Oil, Small tools, Minor items like thread in dress making, nails in furniture (nuts, bolts in furniture) etc.

Therefore, indirect materials can not be easily identified with specific job. They may not vary directly with the output. It is considered as a part of overheads.

1.6.2 Labour Cost

This is the cost of remuneration in the form of wages, Salaries, Commissions, Bonuses etc. paid to the workers and employees of an organisation.

- **Direct Labour Cost :** Direct Labour Cost is the amount of wages paid to those workers who are engaged on the manufacturing line. It consists of wages paid to workers engaged in converting of raw materials into finished products. The amount of wages can be conveniently identified with a particular line, product, job or process. These workers directly handle machines on the production line. Direct wages include payment made to the following group of workers.

- 1) Labour engaged on the actual production of the product
- 2) Labour engaged in aiding the operation viz. supervisor, foremen, shop Clerks and worker on internal transport.
- 3) Inspectors, Analysts, needed for such production.

Example : Carpenter in furniture making unit, tailor in readymade wear unit, Labour in construction work etc.

- **Indirect Labour Cost :** It is the amount of wages paid to those workers who are not engaged on the manufacturing line. It is of general character and can not be directly identified with a particular cost unit. This indirect labour is not directly engaged in the production operations but such labour assist or help in production operations. It can not be easily identified with specific job, contract of work order. It may not vary directly with the output. It is treated as part of overheads.

Example : Labour in Human Resource department, Labour in payroll department, Labour in stores, Labour in Securities Department, Labour in power house department etc.

1.6.3 Expenses

All costs other than material and labour are termed as expenses. It is defined as the cost of services provided to an undertaking and the notional cost of the use of owned assets.

- **Direct Expenses** : It is the amount of expenses which is directly chargeable to product manufactured or which may be allocated to product directly. It can be easily identified with the product. These are the expenses which are specifically incurred in connection with a particular job or cost unit. They are also called as chargeable expenses.

Example : Hire of special plant for a particular job, Travelling expenses in securing a particular contract, Carriage paid for materials purchased for specific job, Royalty paid in mining or production etc.

- **Indirect Expenses (Overheads)**: All indirect costs other than indirect materials and indirect labour costs, are termed as indirect expenses. It is the amount of expenses which can not be charged to the product directly. These can not be directly identified with particular job, process or work order and are common to cost units' or cost centers.
- Indirect expenses / Overheads can be sub-divided into following main groups.

1. Factory or Works Overheads: Also known as manufacturing or production overheads it consists of all costs of indirect materials, indirect labour and other indirect expenses which are incurred in the factory.

Examples :

Factory rent and insurance. Depreciation of Factory building and machinery.

2. Office or Administration overheads: All indirect costs incurred by the office for administration and management of an enterprise.

Examples:

Rent, rates, taxes and insurance of office buildings, audit fees, directors fees.

3. Selling and Distribution overheads: These are indirect costs in relation to marketing and sale.

Examples :

Advertising, Salary and Commission of sales agents, Travelling expenses of salesmen.

1.7 SUMMARY

Cost Accounting is the process of accounting for costs from the point at which expenditure is incurred or committed to the establishment of its ultimate relationship with cost center and cost units. Cost accounting profession got recognition in 1939 in India. It has been made compulsory for specified manufacturing companies. Cost Accounting has the objectives of determining Product costs, facilitate planning and control of regular business activities and supply information for taking short term and long-term decisions. Cost Accounting is useful in different areas such as materials, labour, overheads, stock valuation etc.

1.8 EXERCISE

1. What is cost Accounting? What are its objectives?
2. What are the various elements of costs?
3. What is meant by Cost Accounting? Explain in brief different ways of Cost Classification.
4. Write short notes on:
 - a. Cost centers
 - b. Cost units
 - c. Elements of costs
5. Choose the correct alternative
 1. Cost accounting is an important system developed for

i) shareholders	ii) government
iii) management	iv) financial institutions
 2. The costing which determines cost after it has been actually incurred is

i) historical	ii) standard
iii) estimated	iv) marginal
 3. A cost center is a

i) location for which cost is incurred	ii) an organisation
iii) a unit of cost	iv) profit center
 4. A cost center which is engaged in production activity is called

i) production cost center	ii) process cost center
iii) impersonal cost centre	iv) production unit

6. Variable cost per unit remains _____.
- i) **constant**
 - ii) flexible
 - iii) (i) & (ii)
 - iv) none of the above
7. Cost which is related to capacity is called :
- i) Fixed cost
 - ii) Capacity cost
 - iii) Plant cost
 - iv) **none of the above**
8. Cost which is unaffected by the change in output is called as :
- i) **Fixed cost**
 - ii) Variable cost
 - iii) Period cost
 - iv) None of the above
9. Cost which is relevant for decision-making is
- i) Relevant cost
 - ii) **Past cost**
 - iii) Opportunity cost
 - iv) Imputed cost
10. The cost which remains constant irrespective of output upto capacity limit is
- i) **Fixed cost**
 - ii) Product cost
 - iii) Variable cost
 - iv) Sunk cost
11. Variable cost is also known as
- i) Product cost
 - ii) Period cost
 - iii) **Direct cost**
 - iv) Semi fixed cost
12. The cost which is directly chargeable to the product is
- i) Indirect cost
 - ii) **Direct cost**
 - iii) Overheads
 - iv) Period cost



CLASSIFICATION OF COSTS AND COST SHEET

Unit Structure :

- 2.0 Objectives
- 2.1 Introduction
- 2.2 Cost Classifications
- 2.3 Cost Sheet
- 2.4 Solved Problems
- 2.5 Summary
- 2.6 Exercises

2.0 OBJECTIVES

After studying the unit the students will be able to:

- Understand the concept of cost
- Classify the costs
- Understand the cost sheet
- Explain the elements of cost.
- Prepare the cost sheets.

2.1 INTRODUCTION

A manufacturing organisation converts raw materials into finished products. For the purpose, it employs labour and provides other facilities. While compiling production cost, amounts spent on all these facilities are required to be ascertained. Thus, cost ascertainment involves (a) collection and classification of costs according to cost elements (b) its allocation or apportionment to cost centres or units (c) choice of an appropriate method of costing and (d) selection of an appropriate costing technique. Costs are primarily classified into various elements for accounting and control.

2.2 COST CLASSIFICATIONS

Cost items are analysed or grouped according to their common characteristics which is some independent factor. There are many objectives of cost classifications depending on the

requirements of management. The different cost classifications are as follows:-

2.2.1 Cost Classification by Elements :

The constituent elements of costs are broadly classified into three distinct elements i.e. materials, labour and expenses. These three elements of cost can be further grouped into direct and indirect categories. Direct materials refer to the cost of materials which are conveniently and economically traceable to specific units of output for example. Raw cotton in textiles, crude oil in making diesel. The indirect materials refer to materials that are needed for the completion of the product but whose consumption with regard to the product is either so small or so complex that it would not be appropriate to treat it as a direct material. For example, stationery lubricants, cotton waste etc.

2.2.2 Cost Classification by Function.

A business organisation has to perform several functions such as Manufacturing, Administration, Selling and Distributing and Research and Development. Functional classification of cost implies that the business performs many functions for which costs are incurred. Expenses or Costs are usually classified by function and grouped under the headings of Manufacturing, Selling and Administrative costs in measuring net income.

Manufacturing costs are all check costs incurred to manufacture the products and to bring them to a saleable condition. This includes direct material, direct labour and indirect manufacturing costs or overheads. Administration costs are incurred for formulation of policy, directing the organisation and controlling the activities excluding the cost of research, development, production, selling and distribution. These costs include salary of executives, office, staff, office rent, stationery, postage etc. Selling costs, include the cost of creating and stimulating demand and getting customers. For example, advertisement, salary and commission to salesmen, packing. Distribution costs include the cost of warehouse, freight, cartage etc.

Research and Development costs are incurred in the process of finding out new ideas, new processes by experiments or other means of putting the results of such experiments on a commercial basis. Functional classification of cost is important because it provides an opportunity to the management to evaluate the efficiency of departments performing different functions in an organisation.

3.2.3 Cost Classification by variability:

Cost can be classified as (i) fixed (ii) variable and (iii) semi - fixed or semi variable in terms of their variability or changes in cost behaviour in relation to changes in output or activity or volume of production. Activity may be indicated in any form such as units of output, hours worked, sales, etc. The separation of costs into variable and fixed categories is the most difficult part of the costing operation. Certain costs are easily identifiable as variable or fixed while other costs can be segregated only after careful consideration of their nature and an examination of their behaviour.

i) Fixed costs:

Fixed cost is a cost which does not change in total for a given time period despite wide fluctuations in output or volume of activity. These costs must be met by the organisation irrespective of the volume level. These costs are also known as capacity costs, period costs or stand - by costs; for example, rent, property taxes, supervisor's salary, advertising, insurance etc.

ii) Variable costs:

Variable costs are those costs which vary directly and proportionately with the output. There is a constant ratio between the change in the cost and the change in the level of output. Direct materials and labour are the examples of variable costs. Thus, all these costs which tend to vary directly with variations in volume of output are variable costs. However, it must be remembered that variable costs remain the same or approximately the same in amount per unit of production regardless of increase or decrease in volume.

iii) Semi variable or semi fixed costs:

There is another group of costs in between the fixed and variable costs. It is semi variable or semi fixed costs. These costs vary in some degree with volume but not in direct proportion. Such costs are fixed only in relation to specified constant conditions. Semi fixed costs are those costs which remain constant upto a certain level of output after which they become variable. For example: maintenance of building, depreciation of plant, supervisor's salary, telephone expenses etc.

2.3 COST SHEET

Cost sheet is a statement prepared to present the detailed costs of total output during a period. It provides information relating to cost per unit at different stages of total cost of production. The preparation of cost sheet is one of the important and primary function of cost accounting. Cost sheet is not an account. There is

a prescribed form for preparation of cost sheet. A cost sheet is a statement of cost prepared for a given period of time in such a manner that it indicates various elements of cost as clearly as possible. The cost sheet is useful in ascertaining the total cost of production per unit, formulation of production plan, fixing up the selling price and to minimize the production cost. Sometimes standard cost data are provided to facilitate comparison with the actual cost increased. The preparation of the cost sheet requires understanding of the treatment of the following items:-

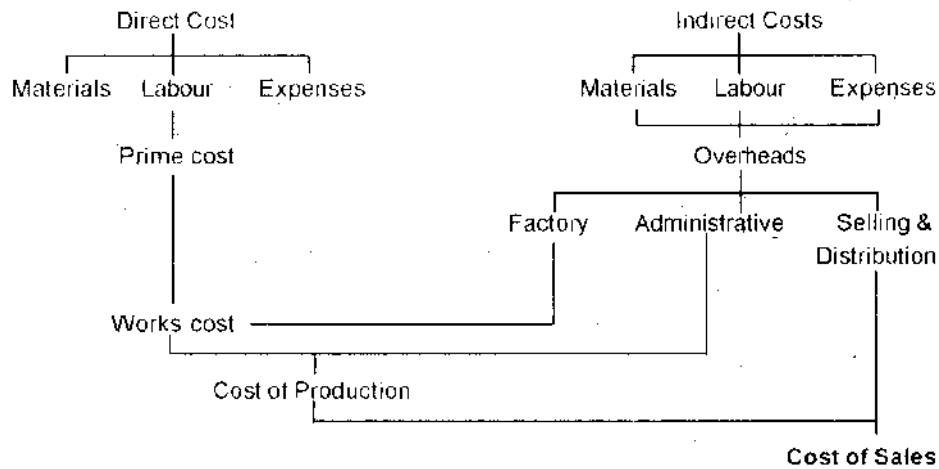
- a) **Stock of raw materials:** The opening and closing stock of raw materials are to be adjusted with purchase of Raw materials in order to determine the value of raw materials consumed for the output produced. Carriage/ Freight inward and Octroi on purchase etc. also to be added to purchases. This is a part of Prime Cost.
- b) **Stock of Work in Process –** The value of stock of work in process is a part of Factory cost and therefore, it should be adjusted with factory overheads. Sale of scrap should be deducted from the factory overheads in order to determine the total factory cost.
- c) **Stock of Finished goods :-** Finished goods covers the products on which factory work has been completed. It is the cost of completed production. The opening and closing values of finished goods are to be adjusted with the total cost of production in order to arrive at cost of sales.

2.3.3 Expenses excluded from cost sheet:

There are certain expenses /costs which do not form a part of cost sheet. Some of these expenses are an apportionment of profit. Examples of these expenses are -

- i) Dividend to shareholders
- ii) Income Tax
- iii) Interest on loan
- iv) Donations paid
- v) Capital expenditure
- vi) Capital loss on sale of assets.
- vii) Commission to Partners / Managing Director
- viii) Discount on issue of shares/ debentures
- ix) Underwriting commission.
- x) Writing of goodwill/ bad debts
- xi) Provision for Taxation, Bad Debts or any kind of Fund or reserves.

Break up of cost sheet



2.3.4 Specimen of cost sheet.

The specimen form of a cost sheet is given below:

Cost sheet for the period
(Production ... Units)

Particulars	Total Cost Rs.	Cost Per Unit Rs.
Direct Materials		
Raw Materials		
Opening stock Materials :		
Add : Purchases		
Add : Carriage / Freight Inward _____		
Less : Closing stock _____		
Cost of materials consumed		
Direct Labour		
Direct Expenses		
	_____	_____
Prime cost		
Factory overheads		
Add: Work in Progress (Opening)		
Less : Work in Progress (Closing)		
Works /Factory cost		
Office and administrative expenses		
Cost of Production (of goods produced)		
Add: Op. Stock of finished goods		
Less closing of finished goods		
cost of production (of goods sold)		

Selling & Distribution expenses		
Cost of Sales		
Add. Profit (Loss)		
Sales		

2.3.5 Elements of Total Cost

Costs are classified under different heads which represent the successive stages through which the cost flow.

i) **Prime Cost**

Prime cost is the basic cost of any product. It comprises of those expenses which could be traced directly to it. The prime **cost** consists of cost of direct materials, direct labour and direct expenses. Direct expenses include special expenses which can be identified with product or job and are charged directly to the product as part of the prime cost. For example cost of hiring special plant or machinery, cost of special moulds, design or patterns, Architect's fees, Royalties, License fees etc.

ii) **Work cost:**

Works cost of a Product consists of prime cost plus the portion of works or factory expenses chargeable against the Production. Works or factory expenses include, indirect materials indirect labour and indirect expenses. Indirect materials refer to those materials that are needed for the completion of the product but the consumption of these materials is either so small or complex that it would not be appropriate to treat it as direct materials. These are supplies that cannot be conveniently and economically charged to a specific unit of output. For example, lubricants, cotton waste, works stationery etc.

Indirect labour is that labour which does not affect the construction or the composition of the finished product. This is the labour cost of production related activities that cannot be associated with or conveniently traced to specific product through physical observation. For example, Foremen's salary and salary of employees engaged in maintenance or service work. Indirect expenses covers all expenditure incurred by the manufacturer from the time of production to its completion as delivery to customer by way of rate of product. Any cannot be allocate but which can be apportioned to or absorbed by the cost cehtres cost units are known as indirect expenses. These expenses are incurred for the benefit of more than one product, job or activity and, therefore, must be apportioned by appropriate bases to the various functions or products. For example, lighting and heating, maintenance factory manager's salary, watch and ward department's salary etc.

(ii) Cost of Production :

Cost of Production consists of works cost plus an additional amount of office and administrative expenses. It includes all expenses connected with the managerial functions such as planning, organizing, directing, coordinating and controlling the operations of the manufacturing business. For example, office rent, salary, lighting, stationery, repairs and maintenance and depreciation of office building, audit fees, legal expenses.

iv) Cost of Sales:

Cost of sales consists of cost of production plus proportionate selling and distribution expenses of the product. Selling expenses include the expenses incurred for creating demand for the product such as advertisement, salaries of salesmen, selling expenses and show room expenses. Distribution expenses are those expenses incurred in connection with the delivery of goods to the customers such as packing, carriage outwards, warehouse expenses.

2.4 SOLVED PROBLEMS

Illustration -1

Bombay Manufacturing company submits the following information on 31-3-2010

Particulars	Rupees
Sales for the year	2,75,000
Inventories at the beginning of the year-	
- Raw Materials	3,000
- Work in Progress	4,000
- Finished Goods	1,10,000
Purchase of materials	65,000
Direct Labour	6,000
Inventories at the end of the year -	
- Raw	Materials
4,000	
- Work in Progress	6,000
- Finished Goods	8,000
Other expenses for the year –	
Selling expenses	27,500
Administrative expenses	13,000
Factory overheads	40,000
Prepare Statement of cost	

Solution :

Bombay Manufacturing Company
Statement of cost for the year ended 31-3-2010

	Rs.	Rs.
Materials consumed		
Opening stock:	3,000	
+ Purchases	110000	
	113000	
- Closing stock	4000	
		109000
Direct Labour		65000
Direct Expenses		6000
		180000
Prime cost		
Factory overheads	40000	
+ Work in Progress (beginning)	4000	
	44000	
- Work in Progress (Closing)	6000	
		38000
Works cost		2,18,000
Administrative expenses		13,000
Cost of Production		2,31,000
+ Opening Stock of finished goods		7,000
		2,30,000
- Closing Stock of finished goods		8,000
		2,30,000
Selling & Distribution expenses		27,500
cost a sales		2,57,500
Profit (Bal. Fig)		17,500
Sales		2,75,000

Illustration -2

From the following information prepare a statement showing (i) Prime cost (ii) Works cost (iii) Cost of Production (iv) Cost of Sales (v) Net profit of X Ltd. which produced and sold 1000 units in June 2009.

	Rs.
Opening Stock:	
Raw Materials	24,000
Finished goods	16,000
Closing stock:	
Raw Materials	20,000
Finished goods	15,000
Purchase of Raw Materials	80,000
Sales	2,00,000
Direct Wages	35,000
Factory Wages	2,000

Carriage Inward	2,000
Carriage Outward	1,000
Factory Expenses	4,000
Office Salaries	15,000
Office Expenses	12,000
Factory Rent & Rates	2,500
Depreciation - Machinery	2,500
Bad Debts	1,500

Solution

Ltd.
Cost Statement for June, 2009

Particulars	Rs.	Total Cost Rs.	Cost per Unit Rs.
Opening stock of materials	24,000		
Add: Purchase of materials	<u>80,000</u>		
Add: Carriage Inward	<u>2,000</u>		
	1,06,000		
Less: Closing stock of materials	<u>20,000</u>		
Cost of Materials consumed		86,000	86.00
Direct Wages		35,000	35.00
(i) PRIME COST		<u>121,000</u>	<u>121.00</u>
Factory overheads :			
Factory Wages	2,000		
Factory expenses	4,000		
Factory Rent & Rates	2,500		
Depreciation	<u>2,500</u>		
		<u>11,000</u>	<u>11.00</u>
(II) WORKS COST		<u>1,32,000</u>	<u>132.00</u>
Administrative Overheads :			
Office Salaries	15,000		
Office Expenses	12,000	27,000	27.00
(iii) COST OF PRODUCTION		<u>1,59,000</u>	<u>159.00</u>
Selling & Distribution Overheads :			
Carriage Outward	1,000		
Bad Debts	<u>1,500</u>		
		<u>2,500</u>	<u>2.50</u>
TOTAL COST		<u>1,61,500</u>	<u>161.50</u>
Add: Opening Stock of finished goods		<u>16,000</u>	
		1,77,500	
Less: Closing Stock of finished goods		<u>15,000</u>	
(iv) Cost of Sales		<u>1,62,500</u>	<u>162.50</u>

(v) Net Profit (Bal.Fig)	37,500	37.50
Sales	2,00,000	200.00

Illustration – 3

NRC Ltd., manufactured and sold 1000 Radio sets during the year 2009. The summarized accounts are given below :

Mfg. / Trading & Profit & Loss A/c			
	Rs.		Rs.
To Cost of Materials	40,000	By Sales	2,00,000
To Direct Wages	60,000		
To Manufacturing Exp.	25,000		
To Gross Profit	75,000		
	2,00,000		2,00,000
To Salaries	30,000	By Gross Profit	75,000
To Rent, Rates & Taxes	5,000		
To General Expenses	10,000		
To Selling & Distribution Exp.	15,000		
To Net Profit	15,000		
	75,000		75,000

It is estimated that output and sales will be 1200 Radio Sets in the year 2010. Prices of Materials will rise by 20% on the previous year's level. Wages per unit will rise by 5% Manufacturing expenses will rise in proportion to the combined cost of materials and wages. Selling and distribution expenses per unit will remain unchanged. Other expenses will remain unaffected by the rise in output. Prepare cost sheet showing the price at which the Radio Sets should be sold so as to earn a profit of 20% on the selling price.

Solution**COST SHEET**

	2009		2010	
	Total Rs.	Per Unit Rs.	Total Rs.	Per Unit Rs.
Direct Materials	40,000	40.00	57,600	48.00
Direct Wages	60,000	60.00	75,600	63.00
PRIME COST	1,00,000	100.00	1,33,200	111.00
Manufacturing Expenses	25,000	25.00	33,300	28.00
WORKS COST	1,25,000	125.00	1,66,500	139.00
Salaries	30,000	30.00	30,000	25.00
Rent, Rates Insurance	5,000	5.00	5,000	4.00
General Expenses	10,000	10.00	10,000	8.00
COST OF PRODUCTION	1,70,000	170.00	2,11,500	176.00
Selling & Distribution Expenses	15,000	15.00	18,000	15.00
Cost of Sales	1,85,000	185.00	2,29,500	191.00
Net Profit	15,000	15.00	57,275	48.00
SALES	2,00,000	200.00	2,86,775	239.00

Illustration – 4.:

A factory can produce 60,000 units per year at its 100% capacity. The estimated cost of production are as under:-

Direct Material - Rs. 3 per unit
Direct Labour - Rs. 2 per unit

Indirect Expenses :

Fixed - Rs. 1,50,000 per year
Variable - Rs. 5 per unit
Semi-variable - Rs.50,000 per year upto 50% capacity and an extra expenses of Rs.10,000 for every 25% Increase in capacity or part thereof.

The factory produces only against order and not for stock. If the Production programme of the factory is as indicated below and the management desires to ensure a Profit of Rs. 1,00,000 for the

year, work out the average selling price at which per unit should be quoted:

First 3 months of the year 50% of capacity remaining 9 months 80% of the capacity. Ignore selling, distribution and administration overheads.

Solution :

Particular	First 3 months (7500 Units) Rs.	9 Months (3600 Units) Rs.	Total Rs.
Direct Material	22500	108000	130500
Direct Labour	15000	72000	87000
	37500	1,80,000	2,17,500
Add : Indirect Expenses:			
Fixed 1: 3)	37500	112500	150000
Variable @Rs.5 b.u.	37500	180000	217500
Semi -variable			
For 3 months	12500	—	—
@Rs.50,000 p.a.			
For 9 months			
@Rs.70,000 p.a.	—	525000	65000
	125000	525000	650000
Total Cost			
Profit	—	-	100000
			750000
Sales			750000

Illustration -5

The following figures have been taken from the books of M Ltd. as on 31.12.2009

Stock of Raw Materials on 1.1.2009	Rs.	35,000
Stock of Raw Materials on 31.12.2009	Rs.	5,000
Purchase of Materials	Rs.	50,000
Factory Wages	Rs.	45,000
Factory Expenses	Rs.	17,500
Establishment Expenses	Rs.	10,000
Finished Stock on 1.1.2009	Rs.	15,000
Finished stock on 31.12.2009	Rs.	7,500
Sales	Rs.	2,00,000

The Company manufactured 4000 units during the year 2009. The company is required to quote for the price for supply of 1000 units during the year 2010. The cost of material will increase

by 15% and factory labour will cost more by 10% in the year 2010 Prepare a statement showing the price to be quoted to give the same percentage of net profit on sales and was realized during 2009.

a) **Cost Sheet for the year 2009**

	Rs.	Rs.
Opening Stock of Materials :	35,000	
+ Purchases	50,000	
	85,000	
- Closing stock of Materials	5,000	
Materials Consumed	80,000	20.00
Factory Wages	45,000	11.25
Prime Cost	1,25,000	31.25
Factory Expenses	17,500	4.37
Works Cost	1,42,500	35.62
Establishment Expenses	10,000	2.50
Cost of Production	1,52,500	38.12
Add : Opening Stock of finished goods	15,000	
	1,67,500	
Less : Closing stock of finished goods	7,500	
Cost of Sales	1,60,000	
Profit	40,000	
Sales	2,00,000	

b) **Statement showing quotation Price for 1000 units**

		Rs.
Materials (20 x 1000) =	20,000	
+ 15% increase	3,000	23,000
Factory wages (11.25 x 1000)=	11,250	
10% increase	1,125	12,375
Prime Cost		35,375
Factory Expenses (4.375 x 1000)		4,375
Works Cost		39,750
Establishment Expenses (2.50 x 1000)		2,500
Total Cost		42,250
Profit (20% on Sale i.e., 25% of Cost)		10,563
Sales		52,813

Note : Percentage of Profit on sales earned during the year 2002 is 20%

$$= \frac{4000}{2000} \times 100 = 20\%$$

Illustration – 6.

In a factory two types of T.V sets are manufactured i.e black & white + colour. From the following particulars prepare a statement showing cost and profit per T.V Set sold. There is no opening or closing stock.

	B Colour Rs.	& W	Rs.
Materials	273000	10,80,000	
Labour	156000	6,20,000	

Works overhead is charged at 60% of Prime cost and Office overhead is taken at 20% at Works cost. The selling price of B & W is Rs.60,00 and that of colour is 10000. During the period 200 B & W and 400 colour T.V. sets were sold. The selling expenses are Rs. 50 per T.V.Set.

Solution**B) Statement of Cost and Profit**

Particulars	B & W	Colour	
	Rs.	Rs.	Per Unit
Materials	273000	10,80,000	2700
Labour	156000	6,20,000	1550
Prime Cost	429000	17,00,000	4250
Add : Work Overheads (60% of Prime Cost)	257400	10,20,000	2550
Works Cost	686400	27,20,000	6800
Add : Office overheads (20% of Works cost)	137280	5,44,000	1360
Cost of Production	823680	32,64,000	8160
Add : Selling Expenses	10000	20,000	50
Cost of Sales	833680	32,84,000	8210
Profit (Bal. Fig)	366320	7,16,000	1790
Sales	1,20,000	40,00,000	10,000

2.5 SUMMARY

Cost is a resource sacrificed or forgone to achieve a specific objective. It is a monetary amount that is paid to acquire goods or services. Costing is the process of determining the cost of doing something. Cost is composed of three elements - materials, labour and expenses or overheads. Each of these costs can be further classified as (a) Direct (b) Indirect. Cost can also be classified on the basis of function, variability and elements. Cost sheet is a statement prepared to present the detailed cost of total output during a period. It provides information relating to cost per unit at different stages of the total cost of production. There are certain expenses which are not considered while preparing the cost sheet, such as Dividend, Income tax, Interest on loan, Donation paid, Capital expenditure, Writing off goodwill and Provisions. Prime Cost, Work Cost, Cost of Production and Cost of sales are the different elements of costs.

2.6 EXERCISES:

1. What is cost? What are the different elements of costs?
2. Explain the significance of each of the following cost classifications:
 - a) Direct and indirect costs
 - b) Variable and fixed costs
 - c) Controllable and uncontrollable costs
3. What are the items of expenses which are excluded from cost sheet? Why?
4. Fill in the blanks:
 - a) -----comprises of those expenses which could be traced directly to the particular product. (Prime Cost)
 - b) Cost of hiring special plant or machinery is a ----- expenses. (Direct)
 - c) Architect's fees, Royalties, License fees etc. are the part of -----cost. (Prime)
 - d) The opening and closing stock of raw materials are to be adjusted with ----- . (purchase of Raw materials)
 - e) Carriage/ Freight inward and Octroi on purchase etc. are to be added to (purchases of raw materials).
 - f) The value of stock of work in process is a part of ----- . (Factory cost)
 - g) Sale of scrap should be deducted from the total ----- (factory overheads)

- h) The opening and closing values of finished goods are to be adjusted with the ----- . (total cost of production).
- i) Prime cost plus the portion of works or factory expenses chargeable against the Production is equal to ----- . (Works Cost)
- j) Indirect materials indirect labour and indirect expenses are called as ----- . (Works or factory expenses include)
- k) Lubricants, cotton waste, works stationery etc. are the examples of ----- . (Indirect materials)
- l) -----labour does not affect the construction or the composition of the finished product. (Indirect).
- m) Foremen's salary and salary of employees engaged in maintenance or service work etc. are examples of ----- labour. (indirect).
- n) The expenses incurred for the benefit of more than one product, job or activity are called as -----expenses. (Indirect overheads).
- o) Factory manager's salary, watch and ward department's salary etc. are the examples of ----- . (Indirect expenses)
- p) Cost of Production consists of works cost plus an additional amount of ----- . (office and administrative expenses)
- q) Cost of production plus proportionate selling and distribution expenses of the product is equal to ----- . (Cost of sales)
- r) Salesmen's salary, show room expenses etc. are the ----- expenses.(Selling)
- s) Packing, carriage outwards, warehouse expenses etc. are -- ---expenses. (Distribution)
5. The following information is supplied relating to an output for the year ended 31.12.2009.

Particulars	Rupees
Purchase of Raw materials	148000
Direct wages	132000
Rent & Rates	14000
Carriages inward	6000
Stock on 1-1-2009	
Raw materials	22000
Work in progress	18000
Finished goods	30000

Stock on 31.12.2009

Raw materials	24000
Work in progress	35000
Finished goods	25000
Factory expenses	18000
Sales	420000

Selling and distribution costs amounted to 75 paise per unit sold. 25000 units were produced during the year. You are required to prepare cost sheet showing break –up of costs, total net profit and net profit per unit sold.

5. A factory produces a standard product. The following information is given to you from which you are required to prepare a cost sheet for January, 2009.

Direct materials consumed	Rs. 90,000
Direct Wages	Rs. 30,000
Other direct expenses	Rs. 10,000
Factory overheads – 80% of direct wages	
Office overheads – 10% of work cost	
Selling and distribution expenses	Rs. 2 per unit sold.

Units produced and sold during the month 10000. Find out the selling price per unit on the basis that Profit mark up is uniformly made to yield a profit of 20% of the selling price. There was no stock of work in progress at the beginning or at the end of the period.

6. A toy manufacturer earns an average net profit of Rs.3 per piece on a selling price of Rs.15 by producing and selling 60,000 pieces at 60 percent of the potential capacity. The composition of the cost of sales is :

Direct Materials	Rs. 4
Direct wages	Rs. 1
Work overhead	Rs. 6 (50 per cent fixed)
Sales Overhead	Rs. 1 (25 percent variable)

During the current year, he intends to produce the same number of pieces, but anticipates that-

- Fixed expenses will go up by 10 per cent.
- Direct labour will increase by 20 percent.
- Direct material cost will increase by 5 percent.
- Selling price will remain the same.

He obtains an order for a further 20 per cent of his capacity. What minimum price will you recommend for accepting an order to ensure the manufacturer an overall profit of Rs.183500?

7. The following particulars are extracted from the works and other relevant source in respect of a Ltd. Company?
- a) Estimated material cost of the job is Rs.25000 and the direct labour cost is likely to be Rs.5000
 - b) It will require machining by a German machine for 20 hours and a Japanese machine for 6 hours.
 - c) The machine hour rates for the German and Japanese machines are Rs.100 and Rs.150 respectively.
 - d) The direct wages in all other shops during the last year amounted to Rs.800000 as against Rs. 180000 of factory overhead.
 - e) The factory cost of all other jobs amounted to Rs.375000 as against Rs.375000 of office expenses.

You are required to make a quotation with 20 per cent profit on selling price.



RECONCILIATION OF COST AND FINANCIAL ACCOUNTS

Unit Structure :

- 3.0 Objectives
- 3.1 Introduction
- 3.2 Need for Reconciliation
- 3.3 Procedure for Reconciliation
- 3.4 Solved Problems
- 3.5 Exercises

3.0 OBJECTIVES:

After studying the unit the students will be able to:

- Ascertain the difference between Profit as shown by Financial Profit and Loss Account and Profit appearing in Costing Profit & Loss Account.
- Identify and quantify the cost components, which contribute to the difference in profit figures.
- Prepare a statement reconciling the two profit figures reported by financial and cost records.

3.1 INTRODUCTION

It is normally assumed that the profit of a business for a given period is given by the Profit & Loss account made out for that period.

Imagine your surprise, when Profit and Loss Account prepared by the financial accountant of X Ltd. shows a profit of Rs.4,56,000 for the year ended 31.03.2009. While the cost accountant has prepared a cost sheet for the same period and arrived at a profit of Rs.5, 12,000. You feel that one of the figures reported should be wrong, otherwise how could there be a difference.

However, there is a logical explanation for the difference in the profit figures and both may be right.

This is because the fundamental assumptions made by the two accountants for preparing the profit and loss account vary. For example, Interest on loan will be debited in financial Profit & Loss Account but the cost accountant will ignore this item as he does not consider this interest expense as an item of cost. Naturally, in this case, the cost accountant will report a higher profit than the financial account.

3.2 NEED FOR RECONCILIATION

3.2.1 Need for Reconciliation

The need for reconciliation arises due to the following reasons:

- a) To ensure that no income or expenditure item has been omitted and that there is no under or over recovery of overheads.
- b) To check the arithmetical accuracy, as well as for the determination of reason for disagreement between the two results.
- c) To know the reason for variation of profit or loss as internal control.
- d) To take administrative decisions such as depreciation, stock valuation and direct expenses.
- e) To test the reliability of cost accounts.

3.2.2 REASONS FOR DISAGREEMENT BETWEEN COST AND FINANCIAL RESULT:-

It is very essential to know the causes, which generally give rise to disagreement between Cost and Financial Accounts. These are briefly summarised below:-

1. Expenses that are not taken into account in cost accounting:

The under mentioned expenses are usually not included in overheads or, for that matter in cost.

- a) Expenses or income of purely financial nature like dividends received, rent received, cash discount allowed, etc.
- b) Expenses or profits of capital nature like profit or loss on sale of investments, plant and equipment, etc.

- c) Items not representing actual costs but dependent on arbitrary decisions of management e.g. an unreasonably high salary to the managing director, providing for depreciation at a rate exceeding the economic rate.
- d) Appropriation of profits for dividends, payment of income tax and transfer to reserves.

2. Items recorded in financial books only and not in cost books:

- a) Interest received/ paid on Debentures,
- b) Interest received and paid on Investment and Bank loan or overdraft respectively.
- c) Interest charged/ paid to debtors /creditors
- d) Discount allowed/ received.
- e) Provision for discount on debtors/ creditors
- f) Bad Debts written off/ bad debts recovered.
- g) Discount on issue of shares and debentures.
- h) Income tax paid /refund
- i) Penalty and fines paid / received
- j) Rent received/ paid
- k) Loss by fire, natural calamities or theft /damage recovered.
- l) Loss/ profit on sale of fixed assets, investment
- m) Cost of share transfer /share transfer fees received.
- n) Donation given/received
- o) Deferred revenue expenses written off.
Such as writing off of:
 - i. Preliminary Expenses
 - ii. Discount on Shares/ Debentures

3. Items recorded in cost book only and not in financial books:

- a) Notional rent charges of owned premises
- b) Salary of proprietor
- c) Interest on proprietors fund

4. Items recorded in both books with different amounts:

In Cost book and Financial book some item of expenses and incomes which are treated differently such as -

a) Method of charging depreciation:

In Financial Books depreciation may have been provided, on Straight Line Method or Written down Value Method whereas in Costing Book depreciation may have been charged on the basis of Machine Hour Rate Method. Amounts of depreciation charge in both books are bound to be different.

b) Under and Over recovered expenses:

The expenses in costing books are recorded on the basis of pre-determined rates but in financial books they are recorded on actual basis hence the amount recorded in these two set of books differ.

c) Method of Valuing Stocks:-

It is well known that in Cost Book Stocks are only valued at cost. But in Financial Books stock are valued either at cost or market price, whichever is lower.

3.3 PROCEDURE FOR RECONCILIATION

3.3.1 Procedure

When there is a difference between the profit/loss shown by cost accounts and financial accounts the procedure for reconciliation is similar to that of Bank Reconciliation Statement. For reconciliation following steps should be considered.

1. Prepare a cost sheet for a particular period and find out costing profit or loss if it is not given.
2. If financial profit or loss is not given then find out the same by preparing Trading and Profit and loss account for a period which corresponds to the cost sheet.
3. Ascertain items which are shown in financial account and not in cost account.
4. Ascertain items which are shown in cost account only.
5. Calculate difference between expenses recorded in financial books and the amount of expenses recorded in cost accounts.
6. Reconciliation Statement is to be prepared as on a particular date. Hence one can start with the figure of profit / loss as per cost account and arrive at the figure of profit/ loss as per financial accounts or vice –versa.

[Entries which are at variance with each other will appear in Reconciliation Statement and also entries appearing in only one set of book (non - common items)]

3.3.2 PROFORMA STATEMENT OF RECONCILIATION

1. Starting with financial profit:

Statement of Reconciliation

Between Financial Profit and Cost Profit for the Year ended.....

Particulars	Rs	Rs
Financial Profit (as per the financial books)		xxx
Add		
1. Expenses, losses and appropriation debited in financial books only	xxx	
2. Closing stock under valued in Financial Books	xxx	
3. Opening Stock over valued in Financial books	xxx	
4. Excess depreciation charged in Financial Books	xxx	xxx
5. Expenses under recovered in Cost Books		
6. Income credited only in Cost Books	xxx	
	xxx	
Less		
1. Income credited only in Financial Books	xxx	
2. Closing stock over valued in Financial Books	xxx	xxx
3. Opening Stock under valued in Financial books		xxx
4. Short depreciation charged in Financial Books		
5. Expenses over recovered in Cost Books		
Costing Profit (as per Costing books)		

2. Starting with Costing Profit:

Statement of Reconciliation

Between Financial Profit and Cost Profit For the Year ended.....

Particulars	Rs	Rs
Costing Profit (as per the Costing books)		xxx
Add		
1. Income credited only in Financial Books	xxx	
2. Closing stock over valued in Financial Books	xxx	
3. Opening Stock under valued in Financial Books	xxx	
4. Short depreciation charged in Financial Books	xxx	xxx
5. Expenses over recovered in Cost Books		xxx
6. Expenses debited only in Cost Books	xxx	

Less	xxx	
1. Expenses, losses and appropriation debited in financial books only	xxx	
2. Closing stock under valued in Financial Books	xxx	xxx
3. Opening Stock over valued in Financial Books	xxx	xxx
4. Excess depreciation charged in Financial Books		
5. Expenses under recovered in Cost Books		
6. Income credited only in Cost Books		
Financial Profit (as per the financial books)		

3.4 SOLVED PROBLEMS

Illustration 1: From the following particulars prepare a reconciliation statement:-

	Rs.
Net Profit as per financial records	154506
Net Profit as per costing records	206880
Works overheads under recovered in costing	3744
Administrative Overheads recovered in excess in costing	2040
Depreciation charged in financial accounts	13440
Depreciation recovered in Cost Accounts	15000
Interest received but not included in Cost Accounting	9600
Obsolescence loss charged in financial records	6840
Income tax provided in financial books	48360
Bank interest credited in financial books	900
Stores adjustment credited in financial books	570
Depreciation of stock charged in financial books	8100

Solution

RECONCILIATION STATEMENT		Rs.	Rs.
Net Profit as per costing records			206880
Add:			
1. Administrative Overheads over absorbed		2040	
2. Depreciation excess charged		1560	
3. Income not credited in costing -			
Interest received	15000		
Bank interest	900		
Stores adjustment	570	16470	
			20070
Total			226950
Less		3744	
1. Works overheads under recovered			
2. Expenses not charged in costing books	9600		
3. Income tax provided in Financial Book	48360		
4. Depreciation of Stock charged in Financial Book	8100	66060	69804
Net Profit as per financial books			157146

Illustration 2 : Following is the Trading and Profit and loss account of a factory producing a particular unit of a product of which the actual output is 100000 units.

Trading & Profit and Loss A/c for the year ended 31/12/09

	Rs		Rs.
To Material	200000	By Sales	400000
To Wages	100000		
To Works Exp.	60000		
To Office rent	18000		
To Selling & Dist. Exit	12000		
To Net Profit	10000		
	400000		400000

The normal output of the factory is 1,50,000 units. Works expenses are fixed to the extent of Rs.36,000. Office expenses for all practical purposes are constant, Selling and distribution expenses are variable to the extent of Rs.6000/- Prepare a cost sheet and reconciliation statement.

Solution :**(a) COST SHEET**

Actual output 1,00,000 units Normal output 1,50,000 units

	Per Unit (Rs.)	Total (Rs.)
Material	2.00	2,00,000
Wages	1.00	1,00,000

PRIME COST	3.00	3,00,000
Works expenses		
Fixed (2/3 of 36000) = 24000		
Variable = 24000	0.48	48,000

WORKS COST	3.48	348000
*Actual output/ Normal output = 2/3 Proportionate fixed cost are considered Office Expenses (2/3 * 36000)	0.12	12,000

COST OF PRODUCTION	3.60	3,60,000
Selling and Distribution Expenses		
Fixed (2/3) = 4000		
Variable = 6000	0.1	10,000

COST OF SALES	3.7	3,70,000
Profit	0.3	30,000

Sales	4.00	4,00,000

b) Reconciliation Statement

Profit shown by Cost Accounts		30,000
Less :		
1. Under recovery of Work Expenses	12000	
2. Under recovery of Office Expenses	6000	
3. Under recovery of Selling Expenses	2000	20000

Profits shown by Financial Accounts		10,000

Illustration 3 : The Trading & Profit & Loss account of 'A' Ltd. is as follows:-

Trading & Profit & Loss Account

To Purchases	25120	By Sales (50000 units @ of Rs Rs.1.50 each)	75000
Less : Closing Stock	4050		
To Gross Profit	53870		
	-----		-----
To Net Profit	75000		75000
To Direct Wages	10500		
To Works Expenses	12130	By Gross Profit	43870
To Selling Expenses	7100	By Discount received	260
To Administrative Expenses	5340	By Profit on sale of land	2340
To Depreciation	1100		
To Net Profit	20300		
	-----		-----
	56470		56470

The profit as per cost accounts was only Rs.19,770. Reconcile the financial and costing profits using the following information :

- Cost accounts valued closing stock at Rs. 4280
- The work expenses in the cost accounts were taken at 100% of direct wages.
- Selling & administration expenses were charged in the cost accounts at 10% of sales and 0.10 per unit respectively.
- Depreciation in the cost accounts was Rs.800

Solution :

RECONCILIATION STATEMENT	Rs.	Rs.
Profit as per Cost Accounts		19770
Add: 1. Over absorption of selling expenses	400	
2. Discount received	260	
3. Profit on sale of land	2340	3000
	-----	-----
Less 1. Difference in valuation of closing		22770
2. Under absorption of Administrative Exp.	200	
3. Under absorption of Works Exps.	340	
4. Depreciation under changed	1630	
Profit as per Financial Accounts	300	2470
	-----	-----
		20300

Illustration 4 : From the following Profit & loss account draw up a Memorandum Reconciliation account showing the Profit as per Cost Accounts:-

To Office Salaries	11282	By Gross Profit	54648
To Office Expenses	6514	By Dividend received	400
To Salary to Salesmen	4922	By Interest on Bank FD	150
To Sales Expenses	9304		
To Distribution Exp.	2990		
To Loss on Sale of Machinery	1950		
To Fines	200		
To Discount	100		
To Net Profit c/d	17936		
To Income Tax	55198		55198
To Transfer to Reserves	8000	By Net Profit b/d	17936
To Dividend	1000		
To Balance c/d	4800		
	4136		
	17936		17936

The cost accountant has ascertained a Profit of Rs.19636 as per his books.

Solution :

Memorandum Reconciliation Account :

Dr	Rs	Cr.	Rs.
To Expenses not debited to Cost accounts:		By Profit as per cost account	19636
Fines	200		
Discount	100	By Income not credited in Cost accounts:	400
Loss on sale of Care	1950	Dividend Received	150
Income Tax	8000	Interest on Bank FD	
Tr. to Reserves	1000		
Dividend	4800		
To Net Profit c/d	4136		
	20186		20186

Illustration : 5

M/s ESVEE Ltd. has furnished you the following information from the financial books for the year ended 31st December, 2009.

Particulars	Rs.
Materials consumed	260000
Wages	150000
Factory overheads	94750
Administration Overheads	106000
Selling and Distribution overheads	55000
Bad Debts	4000
Preliminary expenses	5000
Opening Stock (500 units at Rs.35/- each)	17500
Closing stock (250 units at Rs.50/- each)	12500
Sales (10250 units)	717500
Interest Received	250
Rent Received	10000

The cost sheet shows the following:

Cost of materials	Rs. 26 per unit.
Labour cost	Rs. 15 per unit
Factory overheads	60% of Labour cost
Administration overheads	20% of Factory cost
Selling expenses	Rs, 6 per unit
Opening Stock	Rs. 45 per unit

You are required to prepare:

1. Financial Profit & Loss Account
2. Costing Profit & Loss Account
3. Statement of Reconciliation

Solution**A) Financial Books****Profit and Loss Account for the year ended 31-12-2009**

	Rs		Rs.
To Opening Stock (500 Units at Rs.35 each)	17,500	By Sales (10250 units)	7,17,500
To Materials consumed (10000 units)	2,60,000	By Closing stock (250 units at Rs.50 each)	12,500
To Wages	1,50,000		
To Gross Profit c/d	3,02,500		
	<u>7,30,000</u>		<u>7,30,000</u>
To Factory overheads	94,750	By Gross Profit b/d	3,02,500
To Administration c/d	1,06,000	By Interest received	250
To Selling Expenses	55,000	By Rent Provided	10,000
To Bad Debts	4,000		
To Preliminary Expenses	5,000		
To Net Profit	48,000		
	<u>3,12,750</u>		<u>3,12,750</u>

B) COST SHEET FOR THE YEAR ENDED 31.12.2009**Prod. 10000 units**

Particulars	Total Cost Rs.	Cost per Unit Rs.
Material Consumed	260000	26
Labour	150000	15
	<u>410000</u>	<u>41</u>
PRIME COST		
Factory Overheads (60% of Labour cost)	90000	9
	<u>500000</u>	<u>50</u>
WORKS COST		
Administration overheads (20% of work cost)	100000	10
COST OF PRODUCTION	600000	60.
Add : Opening Stock of finished goods (500 units at (Rs.45/- each)	22500	
	<u>622500</u>	

Less : Closing stock of finished goods (250 units)	15000	-----

	607500	6
Selling Expenses	61500	-----
	-----	66
	669000	4
COST OF SALES	48500	-----
PROFIT	-----	70
SALES	717500	

C) STATEMENT OF RECONCILIATION AS ON 31.12.2002

Starting Point (Cost Accountant)	Rs.	Rs.
Profit as per Cost Accounts		48500
Add: 1. Over recovery of overheads :		
Selling expenses	6500	
2. Over valuation of stock :		
Opening stock	5000	
3. Purely financial income:		
Interest	250	
Rent	10000	31750
	-----	-----
		70250
Less : Under recovery of overheads-		
4. Factory overheads	4750	
5. Administrative overheads	6000	
6. Over valuation of stock :	2500	
Closing Stock		
7. Purely financial expenses:	4000	
Bad Debts		
Preliminary expenses	5000	22250
	-----	-----
Project as be Financial Accounts		48000

3.5 EXERCISES

1. What is the need for reconciliation of cost and financial accounts?
2. Discuss the main sources of difference between Profit shown by cost accounts and that as per financial accounts.
3. Objective type questions;

A. Multiple choice questions:

1. Dividend received is shown in _____
 - i) costing profit and loss A/c
 - ii) financial profit and loss A/c
 - iii) Ignored
 - iv) None of the above
2. Over valuation of closing stock in Cost Accounts-----
 - i) Increases costing profit
 - ii) Increases financial profit
 - iii) Decreases costing profit
 - iv) Decreases financial profit
3. Over absorption of overheads in financial accounting
 - i) Decreases financial profit
 - ii) Increases financial profit
 - iii) Increases costing profit
 - iv) Both (i) & (ii)
4. Under valuation of opening stock in costing
 - i) Increases costing profit
 - ii) Decreases financial profit
 - iii) Decreases costing profit
 - iv) Both (i) & (ii)
5. Donations paid is
 - i) Debited to costing P & L A/c
 - ii) Debited to financial P & L A/c
 - iii) Ignored in costing
 - iv) (ii) & (iii)

Answers: ii, i, i, iii, ii.

B. True or false

1. Under absorption of overheads in cost accounting decreases costing profit.
2. Interest received on Bank Deposit is ignored in cost accounting.
3. Interest on investment increases Costing profit.
4. Dividend paid on share capital is debited to financial P & L A/c.
5. Over absorption of overheads in financial accounting decreases the costing profit.
6. Cost accounting considers the Loss or profit on sale of capital assets.
7. Abnormal loss has considered in costing.
8. Fines and penalties reduce the financial profit.
9. Interest or Dividend received increases financial profit.
10. Overvaluation of opening stock in Financial Accounting reduces financial profit.
11. Under valuation of closing stock in costing increases costing profit.
12. Difference in Depreciation in costing and financial accounting distinguishes costing profit from financing profit.

Answers:

False, True, False, True, False, False, true, true, true, true, false, true.

Fill in the blanks

1. Premium on issue of shares is shown in -----accounts only.
2. Transfer to General Reserve is purely ----- item.
3. Interest on Bank Deposits is Credited in -----.
4. Overheads recovered more than actual in costing is called as _____.
5. Overheads recovered less than actual in financial accounting is called as _____.
6. Interest on capital reduces _____ profit.
7. Under absorption of overheads in costing increases _____ profit.
8. Over valuation of closing stock in financial accounting increases _____ profit.
9. Under valuation of closing stock in costing decreases _____ profit.
10. Over absorption of overheads in financial accounting decreases _____ profit.
11. Under absorption of overheads in costing increases _____ profit.
12. Dividend paid on shares is debited to _____ P & L A/c.

Answers:

financial accounts, financial, financial P&L A/c., over absorption of overheads in costing, under absorption of overheads in financial accounting, financial profits, costing profit, financial profits, costing profits, financial profits, costing profits, financial.

4. Practical Problems:

1. The following transactions have been extracted from the financial books of a company.

	Rs.	Units

Sales	250000.00	20000.00
Materials	100000.00	
Wages	50000.00	
Factory overheads	45000.00	
Office & Administrative overheads	26000.00	
Selling & Distribution overheads	18000.00	

Closing stock:		
Finished goods	15000.00	
Work in progress	1230.00	
Materials	3000.00	
Wages	2000.00	
Factory overheads	2000.00	
		7000.00
Goodwill written off		20000.00
Interest on capital		2000.00

In costing books factory overheads were charged at 100% of wages, administration overheads were charged at 10% of factory cost and selling and distribution overheads at the rate of Re.1 per unit sold. Prepare a statement reconciling the Profit as per cost and financial accounts.

2. The financial Profit and loss Account of a manufacturing company for the year ended 31st March, 2009 is as follows:-

	Rs		Rs.
To Materials consumed	50000.00	By Sales	124000.00
To Carriage inwards	1000.00		
To Direct wages	34000.00		
To Works Expenses	12000.00		
To Administration Expenses.	4500.00		
To Selling and Distribution Expenses	6500.00		
To Debenture Interest	1000.00		
To Net Profit d	15000.00		
	124000.00		124000.00

The net profit shown by the cost accounts for the year is Rs.16,270. Upon a detailed comparison of the two sets of accounts it is found that (a) The amounts charged in the cost account in respect of overheads charges are as follows:- Works overhead charges Rs.11,500; Office overhead charges Rs.4,590, Selling and Distribution Expenses Rs.6,640 (b) No charge has been made in the cost account in respect of debenture interest. You are requested to reconcile the profits shown by the two sets of accounts.

3. During the year a company's profit have been estimated from the costing system to be Rs.23,063 whereas the financial accounts prepared by the auditors disclose a profit of Rs.16,624. Given the following information you are required to prepare a Reconciliation statement showing clearly the reason for the difference.

Profit and Loss Account for the year ended March 3, 2009

	Rs.	Rs.		Rs.
Opening Stock	2,47,179		Sales	3,46,500
Purchases	82,154			

	3,29,333			
Closing stock	75,121	2,54,212		

Direct wages		23,133		
Factory overheads		20,826		
		48,329		
Gross Profit		-----		-----
		3,46,500		3,46,500
		9,845	Gross profit b/d	48,329
Administration expenses			Sundry Income	316
		22,176		
Selling expenses		16,624		
Net Profit		-----		-----
		48,645		48,645

The costing record shows:

- a stock ledger closing balance of Rs.78,197
- a direct wages absorption account of Rs.24,867
- a factory overhead absorption account of Rs.19,714
- administration expenses calculated at 3% of the selling price
- selling expenses are five percent on selling price
- no mention of sundry income.

4. A company's Trading and Profit and Loss Account was as follows:-

	Rs.	Rs.		Rs.
Opening Stock	100000.00		Sales	175000.00
Purchases	80000.00			
	<u>180000.00</u>			
Less: Closing stock	80000.00			
		100000.00		
To Direct wages		20000.00		
To Factory Wages		15000.00		
To Gross Profit Cf.		40000.00		
		<u>175000.00</u>		
Total Rs.		175000.00	Total Rs.	175000.00
To Administration expenses		10000.00	By Gross profit	40000.00
To Selling expenses		15000.00		
To Net Profit		15000.00		
		<u>40000.00</u>		<u>40000.00</u>

Costing records show the following:-

- Stock Ledger closing balance Rs.89, 000
- Direct labour Rs.23, 000
- Factory overheads Rs.13, 000
- Administrative overheads and selling expenses each are calculated at 8 per cent of the selling price.

Prepare costing profit and loss account and the statement of reconciliation between the profit or loss as per the two accounts.

5. From the following information you are required to prepare a statement reconciling the result of Cost Book with Financial Books

	Rs.
Net profit as per Financial Books	51,052
Works overhead under recovered in Cost Book	1,001
Depreciation charged in Financial Book	13,000
Depreciation charged in Cost Book	14,326
Obsolescence loss charged in Financial Books only	2,021
Income tax provided in Financial Books only	2,626
Interest received but not recorded in Cost Book	3,031
Bank interest debited in Financial Book only	292

6. The following is the Financial Profit and Loss Account of a company for the year ending 31st March, 2009.

Profit and Loss Account

	Rs		Rs.
To Purchases	2,53,000	By Sales (50000 units at Rs. 16 each)	8,00,000
“ Wages	1,03,000	By Closing stock	43,000
“ Works Expenses	1,16,000	By Interest on Investments	3,000
“ Administration Expenses	55,000	By Profit on Sale of building	24,000
“ Selling Expenses	68,000		
“ Depreciation	12,000		
“ Net Profit	2,63,000		
	-----		-----
	8,70,000		8,70,000

The cost accounts disclosed the following information :-

1. Value of closing stock was Rs.45,000/-
2. Works expenses in cost accounts have been taken at 100% of wages
3. Selling Expenses in cost accounts have been charged at 10% on sales.
4. Administration Expenses in cost accounts have been taken at Rs.1 per unit sold.
5. Depreciation shown in cost accounts was Rs.10,000

Prepare a reconciliation statement to reconcile the profit shown as per cost accounts with the profit shown as per financial accounts.



CONTRACT COSTING

Unit Structure :

- 4.0 Objectives
- 4.1 Introduction
- 4.2 Important Concepts
- 4.3 Different Cost of The Contract
- 4.4 Profit on Contract
- 4.5 Format of Contract Account
- 4.6 Solved Problems
- 4.7 Exercises

4.0 OBJECTIVES

After studying the unit the students will be able to:

- Understand the features of Contract Costing
- Explain the important concepts used in Contract costing.
- Know the format of Contract Account.
- Solve the problems on Contract Costing

4.1 INTRODUCTION

A contract is nothing but a big job having the following main features:

- 1) It May be completed within a months or years.
- 2) It usually for a higher price like lakhs or thousands.
- 3) The actual work may be take place, or at a site which is away from the main office of the contractor.

Contract costing is the method of costing which is used to find out the cost or particular contract. It may be generally calculated from the point of view or the contractor.

4.2 IMPORTANT CONCEPTS

Some of the important terms used in contract costing:-

1) **Contract:-**

A contract is an agreement between the contractor and contractee it include the time period taken to complete the contract, price of the contract and so on.

- 2) **Contractor:-**
A person who undertakes the contract.
- 3) **Contractee**
A person for whom the job is being undertaken.
- 4) **Contract Price:-**
The amount which is to be paid by the contractee to the contractor, for completing the contract work.
- 5) **Work Certified:-**
It is an amount of work done by the contractor and certificated by the architect as per the terms of contract.
- 6) **Work Uncertified:-**
It is an amount of work completed by the contractor but not certified by the architect at the end of the particular accounting year.
- 7) **Retention Money:-**
It is an part of value of work certified by the architect which is a retained by the contractee as a security. It means, the cash paid by the contractee to the contractor in between the contract period is depend on the value of work certified by the architect. From this work certified amount some of percentage being paid by the contractee and the balance of this is called as retention money.

For e.g. → If the work certified is ₹8,00,000 then the contractee is being paid the amount is being 90% of ₹8,00,000 as per the agreement and the balance or 10% of work certified is called as Retention Money.

4.3 DIFFERENT COST OF THE CONTRACT:

1. Material:-

Material which is required for contract is either purchased or issued from store because contract site is away from the head office of the contractor. Material May be taken from different way -

a. Material Issue / Purchased:-

It is debited to contract A/c.

b. Material Transferred:-

If the Materials transferred from one contract to another contract, then those who received the material are debited and who gives the material are credited to the respective contract A/c.

- c. If the material is supplied by the contractee then it is not debited to contract A/c.
- d. Material Returned to Store / Supplier:-**
If the material is return to store or supplier it may be credited to the contract A/c.
- e. Material Lost or Destroyed:-**
If the Material Lost or destroy then the cost of material is credited to costing Profit & Loss A/c.
- f. Sale of Material:-**
If the material or scrap is sold, then the actual cost of material is credited to the contract A/c and the difference of any profit or loss may be transferred to costing Profit & Loss A/c.
- g. Material at Site:-**
After completion of the contract or at the end of the accounting year if any material is lying at site is shown as material at site to the credit side of the contract A/c.
- 2. Labour:-**
Any labour charges related to the particular contract is either paid or outstanding are debited to the contract Account.
- 3. Direct Expenses:-**
Any direct expenses which are related to the particular contract is either paid or outstanding are debited to the contract A/c. It includes architect fees, sanitary fitting, etc.
- 4. Indirect Expenses:-**
Any indirect expenses which are related to the particular contract is either paid or outstanding are debited to the contract A/c. It induces head office expenses, general administrative expenses etc.
- 5. Special Plant:-**
Plant which is specialty purchases for a particular contract and it is also used for that particular contract only, is called as special plant. Plant is also charged to the contract A/c but only upto the extent of depreciation amount, which is called as 'direct Method.' or otherwise we can use also capital method. Under capital Method, we debit the opening balance of plant value to the contract A/c and at the end of the year or contract credit the W.D.V. of the plant. It means, we give the debit effect of the depreciation of the particular plant.

For eg. During a contract plant is purchase for ₹2,00,000 and at the end of the contract the valuation of the plant is ₹1,80,000.

The effect given under Direct Method.

Dr. **Contract A/c** **Cr.**

Particular	₹	Particulars	₹
To Dept on Sp. Plant	20,000		

Effects of plant as for capital Method

Dr. **Contract A/c** **Cr.**

Particular	₹	Particulars	₹
To Special Plant	2,00,000	By WDV of Special Plant	1,80,000

Under both method the net effect of appreciation is ₹20,000.

6. Common Plant:-

A common Plant, it means a plant which is used for any contract whenever needed. The treatment of the common plant is given in the same way of special point. It means either we can use 'Direct Method' of charging depreciation or plant on the debit side of the contract A/c of 'Capital Method or Debiting the opening value of the plant to the contract A/c and creating the WDV of the plant at the end of the contract of accounting year.

7. Work in Progress in Balance Sheet:-

At the end of the accounting year under incomplete contract work in progress may be appear under Asset side of the Balance Sheet.

Extract of Balance Sheet

Assets Side	Amt
Cost of Work Certified	xx
(+) Work Uncertified	xx
(-) Profit & Loss A/c (Reserve)	xx
	xx
(-) Cash Received from Contracted	xx
Work in progress	xx

4.4 PROFIT ON CONTRACT

1) Complete Contract :-

If the contract is completed then the profit or loss on contract, it may be debited or credited to the contract A/c. There is no need to transfer the profit to the reserve, it is entirely transferred to profit and loss a/c.

2) Incomplete Contract:-

If there is an incomplete contract then whatever difference is found out between the value of work in progress certified (Cr. Side of the contract A/c) and the cost of work in progress certified (Dr. Side of the contract A/c) is transferred to notional profit.

Then the notional profit is distributed between the Profit & Loss A/c and work in progress (Reserve profit) Firstly we have to find out the transfer of Profit and Loss A/c. is as under:-

- If the contract is complete upto 25% - then profit & loss a/c is nil. It means there is no need to transfer any profit from notional profit to profit & loss a/c. The entire amount of notional profit is transferred to work in progress (profit reserve).
- If the contract is completed between 25% to 50% - Then the profit & loss is calculated as -

$$\text{Profit \& Loss A / c} = \frac{1}{3} \times \text{Notional Profit} \times \frac{\text{Cash Received}}{\text{Work Certified}}$$

- If the contract is completed between 50% to 90% - then the profit & loss a/c is calculated as,

$$\text{Profit \& Loss A / c} = \frac{2}{3} \times \text{Notional Profit} \times \frac{\text{Cash Received}}{\text{Work Certified}}$$

- Nearing Completion - If the contract is completed between 90% to 99% then profit & loss a/c is calculated as,

$$\text{Profit \& Loss} = \text{Estimated Profit} \times \frac{\text{Cash Received}}{\text{Contract Price}}$$

OR

Sometimes it is given in the problem.

Contract completed is calculated by comparing with the contract price to the work certified.

For eg - If the contract price is ₹10,00,000 and work certified is ₹6,00,000 then the percentage of contract completed is calculated as,

$$\text{Contract Price} = 10,00,000 = 100\%$$

$$\text{Work Certified} \quad 6,00,000 = ?$$

$$\therefore 6,00,000 \times \frac{100}{10,00,000} = 60\%$$

\therefore Contract completed is 60% the 2.3 formula can be used to transfer profit to the profit & loss a/c.

4.5 FORMAT OF CONTRACT ACCOUNT

Format of Contract A/c (If Contract is 100% completed)

Particulars	₹	Particulars	₹
To Material	xx	By Material	
To Labour	xx	Returned / Sales / Destroyed	xx
To Direct Expenses	xx	By WDV of Common Plant (Capital Method)	xx
To Indirect Exp.	xx	By WDV of Special Plant (Capital Method)	xx
To Common Plant		By Contractee's A/c (Full Contract Price)	xxx
Depreciation (Direct Method) Cost (Capital Method)	xx	By Profit & Loss A/c (Loss)	xx
To Special Plant Depreciation (Direct Method) OR Cost (Capital Method)	xx		
To Profit & Loss A/c (Profit)	xx		
	xxx		xxx

Material Returned / Sold / Destroyed is credited to the contract A/c only at original cost whatever profit or Loss is transferred to costing profit and Loss A/c.

Format of Contract A/c (If Contract is Incomplete)

Particulars	₹	Particulars	₹
To Material	xx x	By Material Returned / Sold / Destroyed	xx
To Labour	xx	By WDV of Common Plant (Capital Method)	xx
To Direct Exp.	xx	By WDV of Special Plant (Capital Method)	xx
To Indirect Exp.	xx	By Contractee's A/c (Full Contract Price)	xx
To Common Plant Depreciation	xx	By Profit & Loss A/c (If Loss)	xx

(Direct Method) OR Cost of Plant (Capital Method)	xx		
To Special Plant Depreciation	xx		
(Direct Method) OR Cost of Special Plant (Capital Method)	xx		
To Notional Profit c/d (If Profit)	xx		
	xx		xx
To Profit & Loss A/c	xx	By National Profit b/d	
To working Progress c/d to Balance Sheet (Reserve Profit)	xx		
	xx		xx

Under Incomplete contract, if there is profit, it must be transfer to Notional Profit.

4.6 SOLVED PROBLEMS

Illustration : 1

(Contract Complete Less than 20%).

On 1st October 2013 Arvind Undertook a contract for ₹5,00,000. The following information is available in respect of a contract for the year ended 31/12/2013.

Particulars	₹
Work Certified	80,000
Wages Paid	30,000
Material Supplied	45,000
Other Expenses	5,000
Work Uncertified	1,800
Material Lying at Site	1,500
Wages Outstanding	1,000
Plant	20,000

Provide 10% depreciation on plant p.a. prepare contract A/c in the books of Arvind.

Solution:-

Dr. Contract A/c (3 Months) Cr.

Particulars	₹	Particular	₹
To Material	45,000	By work in Progress c/d	
To Wages	30,000	Material at Site	1,500
(+) O/s	1,000		
	<u>31,000</u>		
To Other Expenses	5,000	Work Certified	1,800
To Depreciation on Plant	500	Work Uncertified	80,000
To Notional Profit c/d	1,800		
	<u>83,300</u>		<u>83,300</u>
To Profit & Loss A/c	Nil	By Notional Profit b/d	1,800
To Work in Progress (Reserve)	1,800		
	<u>1,800</u>		<u>1,800</u>

$$\text{Dep. on Plant} = 20000 \times 10\% \times \frac{3}{12} = 500 \text{ (For 3 Month)}$$

Out of Notional Profit some amount transfer to Profit & Loss A/c is calculated by comparing work certified with the contract price firstly to find out now much percentage (%) the contract is completed.

$$\text{Contract Price} - 5,00,000 = 100\%$$

$$\text{Work Certified} \quad 80,000 = ?$$

$$\text{Contract Completed} = 80,000 \times \frac{100}{5,00,000} = 16\%$$

$$\text{Contract Completed} = 16\%$$

∴ Profit Transfer to Profit & Loss A/c is Nil. Total notional Profit is transfer to work in progress (Reserve).

Illustration : 2

In Complete Contract.

M/s. ABC builder undertook a contract for a contract price of ₹60,00,000 and commenced the work on 1st July 2013. The following particulars are available for 9 months ended 31-03-2014

Particulars	₹
Material Issued from Stores	4,00,000
Material Bought Directly	20,50,000
Wages Paid	19,00,000
Direct Expenses	3,00,000
Establishment Charges	1,50,000
Plant	6,50,000
Sub - Contract Charges	1,00,000
Scrap Sold	30,000
Work Certified	50,00,000

The following further information was available:-

- Outstanding wages and direct expenses were ₹10,000 and ₹20,000 respectively on 31-03-2014.
- Material at site at the end of the year is Valued at ₹1,20,000.
- Value of work uncertified ₹2,00,000 on 31.03.2014.
- Included in wages is the salary paid to supervisor @ ₹30,000 p.m. who had devoted half of the time on this contract.
- Working life of the plant is estimated to be 5 years at the end or which it is estimated to be realized ₹50,000 as scrap value. The plant was purchased exclusively for this contract only.

Prepare contract A/c for the year ended 31-03-2014

Solution:-

Dr.

M/s ABC Builders

Cr.

Particulars	₹	Particulars	₹
To Material Issued From Stores	4,00,000	By Scrap Sold	30,000
To Material bought directly	20,50,000	By Work in Progress Work Certified	50,00,000
To Wages (WN)	17,75,000	Work Uncertified	2,00,000
To Direct Expenses (WN)	3,20,000	Material at Site	1,20,000
To Establishment Charges	1,50,000		
To Depreciation on Plant (WN)	90,000		
To Sub - Contract Charges	1,00,000		
To Notional Profit & Loss A/c	4,65,000		
	53,50,000		53,50,000
To Profit & Loss A/c (WN)	3,10,000	By National Profit b/d	4,65,000
To Work in Progress (Reserve)	1,55,000		
	4,65,000		4,65,000

Working Note:-

i) Wages:-

Wages Paid	19,00,000
(+) Outstanding	10,000
	<u>19,10,000</u>
(-) Supervisions Salary	1,35,000
half of the time devoted to other	
∴ half salary recovered	
(30,000 p.m. x 50% x 9 month)	
Total Wages	<u>17,75,000</u>

ii) Direct Expenses	3,00,000
(+) Outstanding	20,000
Total Direct Expenses	<u>3,20,000</u>

iii) Depreciation on Plant

Contract A/c to be prepared for 9 month (i.e. from 1st July 2013 to 31-03-2014)

$$\begin{aligned} \therefore \text{Depreciation} &= \frac{\text{Original Cost} - \text{Scrap Value}}{\text{Estimated Life of Plant}} \\ &= \frac{6,00,000 - 50,000}{5} = 1,20,000 \text{ p.a.} \end{aligned}$$

$$\therefore 1,20,000 \text{ p.a.} \times \frac{9}{12} = 90,000 \text{ for 9 months}$$

iv) Notional Profit = 4,65,000

Out of this transfer to Profit & Loss A/c is calculated by how much % the contract is completed.

$$\text{Contract Price} = 60,00,000 = 100\%$$

$$\text{Work Certified} = 50,00,000$$

$$\begin{aligned} \text{Contract Completed} &= 50,00,000 \times \frac{100}{60,00,000} \\ &= 83.33\% \end{aligned}$$

Profit & Loss A/c is calculated as 8.33% contract completed then used the formula.

(50 - 90%)

$$\begin{aligned} \text{P \& L A/c} &= \frac{2}{3} \times \text{Notional Profit} \\ &= \frac{2}{3} \times 4,65,000 \end{aligned}$$

Profit & Loss A/c = 3,10,000

- iv) Work in progress (Reserve) is calculated as
 = Notional Profit - Profit & Loss A/c (Profit)
 = 4,65,000 - 3,10,000
 1,55,000

Illustration : 3

The Maharashtra construction company undertook the construction of a building at a contract price of ₹12,00,000. The date of commencement of contract was 1st April 2013.

The following cost information is given for the year ended 31-03-2014

Particulars	₹
Material Sent to the site	3,00,000
Wages	4,40,000
Archited Fees	55,500
Office & Administrative Overheads	1,51,000
Work Uncertified	55,000
Material at site at the end of the year	10,000
Cash Received from the Contractee (Being 90% of the work certified)	9,45,000
Material Destroyed by Fire	5,000
Supervisors Salary	60,000
Plant and Machinery at Cost	2,00,000

(Date of Purchase - 1st July 2013. The estimated working life of the plant - 10 years and its estimated scrap value at the end ₹ 20,000)

You are required to prepare a contract account for the year ended 31st March 2014.

Solution:

**Maharashtra construction company
contract A/c
for the year ended 31-03-2014 (12 months)**

Dr.

Cr.

Particulars	₹	Particulars	₹
To Material Sent to Site	3,00,000	By Material destroy by Fire (Profit & Loss A/c)	5,000
To Wages	4,40,000	By Work in progress Work Certified	10,50,000
To Architectures Fees	55,500	Work Uncertified	55,000
To Office and Administrative Overhead	1,51,000	Material at Site	10,000
To Depreciation on Plant (WN)	13,500		
To Supervisors Salary	60,000		
To Notional Profit c/d	1,00,000		
	11,20,000		11,20,000
To Profit & Loss A/c (wn)	60,000	By Notional Profit b/d	1,00,000
To working Progress (Reserve)	40,000		
	1,00,000		1,00,000

Working Note:-

i) Depreciation on Plant:-

(For 9 Months)

(Plant Purchase on 1/7/13 upto 31/03/2014)

$$\text{Depreciation} = \frac{\text{Original Cost} - \text{Scrap value}}{\text{Estimated Life of Plant}}$$

$$= \frac{2,00,000 - 20,000}{10} = \frac{1,80,000}{10}$$

Depreciation 18,000 p.a.

∴ Depreciation for 9 months

$$= 18,000 \times \frac{9}{12} = 13,500$$

- ii) Notional Profit = 1,00,000 it is distributed between profit & Loss A/c and work in progress (Reserve). Profit & Loss A/c should be calculated by how much % contract is completed compare with contract price & work certified.

$$\text{Contract Price} = 12,00,000 = 100\%$$

$$\text{Work Certified} = 10,50,000 = ?$$

$$= 10,50,000 \times \frac{100}{12,00,000} = 87.5\%$$

$$\text{Contract Completed} = 87.5\%$$

Formula used 50 - 90%)

$$\therefore \text{Profit \& Loss} = \frac{2}{3} \times \text{Notional Profit} \times \frac{\text{Cash Received}}{\text{Work Certified}}$$

$$= \frac{2}{3} \times 1,00,000 \times \frac{90}{100}$$

$$\text{Profit \& Loss A/c} = 60,000$$

- iii) Work in progress (Reserve) =
 = Notional Profit - Profit & Loss A/c
 = 1,00,000 - 60,000
 = 40,000

Note:-

Cash Received ₹9,45,000 (being 90% or the work certified)

$$\therefore \text{Cash received} = 9,45,000 = 90\%$$

$$\text{Work Certified} = ? \quad 100\%$$

\therefore Work Certified can be calculated as

$$= 9,45,000 \times \frac{100}{90}$$

$$= 10,50,000$$

$$\therefore \text{Work Certified} = 10,50,000$$

Estimated Contract:-

Under Estimated contract we have to find out the total estimated profit after completion of contract, nothing but if the contract period is more than one year then the total contract cost deducted from the total contract price and find out the profit. It is not the actual profit it is our estimation in short after completion of contract we will earn the profit.

Estimated profit is calculated for the purpose of transferring profit to the profit & Loss A/c.

Illustration : 4

Uddan Constructors Pvt. Ltd. provide you the following information:

- a) The project commenced on 1st September 2013 and it was estimated to be completed by 31st March 2015.
- b) The contract price was negotiated at ₹680 lacs.
- c) The actual expenditure upto 31st March, 2014 and subsequent additional estimated expenditure upto 31st March, 2015 is furnished as under:

Particulars	Actual Exp. During 1-9-13 to 31-3-2014 ₹	Estimated Exp. during 1-4-14 to 31-3-2015 ₹
Direct Material	195,60,000	127,40,000
Indirect Material	14,23,000	11,77,000
Direct Wages	42,46,500	41,33,500
Supervision Charges	4,14,400	5,55,600
Archited Fees	8,17,500	12,82,500
Construction Overheads	31,52,600	21,47,400
Administrative Overheads	14,16,000	24,34,000
Closing Material at Site	7,50,000	--
Work Uncertified at the end of the year	13,80,000	--
Work Certified during the year	350,00,000	330,00,000

The Value of plant and machinery sent to site was ₹60 Lacs, whereas the scrap value of the plant and machinery at the end at the project was estimated to be ₹3,00,000.

It was decided that the profit to be taken credit for should be that proportion of the estimated net profit to be realized on completion of the project which the certified value of work as on 31-03-2014, bears to the total contract price. You are required to prepare contract account for the period ended 31st March 2014 alongwith the working of profit to be taken credit for.

Solution:-

Uddan Constructors Pvt. Ltd.

**Contract A/c
for the Period from 1-9-2013 to 31-3-2014**

Dr.

Cr.

Particulars	₹	Particulars	₹
To Direct Material	195,60,000	By Work in Progress	
To Indirect Material	14,23,000	Work Certified	350,00,000
To Direct Wages	42,46,500	Work Uncertified	13,80,000
To Supervision Charges	4,14,400	Material at Site	7,50,000
To Architect Fees	8,17,500		
To Construction Overheads	31,52,600		
To Administrative Overheads	14,16,000		
To Depreciation on Plant & Machinery	21,00,000		
To Notional Profit c/d	40,00,000		
	371,30,000		371,30,000
To Profit & Loss A/c	35,00,000	By Notional Profit b/d	40,00,000
To Work in Progress (Reserve)	5,00,000		
	40,00,000		40,00,000

Dr. Memorandum Contract A/c (1-9-2013 to 31-3-2015) Cr.

Particulars	Actual Exp. (1-9-2013 to 31-3-2014) 7 Month	Estimated Exp. (1-4-14 to 31-3-15) 12 Month	Total 7 + 12 = 19 Months	Particulars	₹
To Direct Material	1,95,60,000	1,27,40,000	3,23,00,000	By Contraction's A/c (Full Contract Price)	6,80,00,000
To Indirect Material	14,23,000	11,77,000	26,00,000		
To Wages	42,46,500	41,33,500	83,80,000		
To Super Vision Charges	4,14,400	5,55,600	9,70,000		
To Archited Fees	8,17,500	12,82,500	21,00,000		
To Administrat ive on	14,16,000	24,34,000	38,50,000		
To Dept on Plant	21,00,000	36,00,000	57,00,000		
To Con Struction Overheads	31,52,600	21,47,400	53,00,000		
Total Exp.	3,31,30,000	2,80,70,000	6,12,00,000		
Estimated Profit			68,00,000		
			6,80,00,000		6,80,00,000

Working Note:-

1) Depreciation on Plant & Machinery:-

$$\begin{aligned} \text{Depreciation} &= \frac{\text{Original Cost} - \text{Scrap Value}}{\text{Estimated Life of Plant}} \\ &= \frac{60,00,000 - 3,00,000}{19 \text{ Months}} = \frac{57,00,000}{19} \end{aligned}$$

Depreciation = ₹3,00,000 p.m.

Depreciation is also calculated for actual and estimated period.

- i) Actual Period (from 1-9-2013 to 31-3-2014) for 7 Months.
 \therefore Dep. 3,00,000 p.m. x 7 months
 = 21,00,000
- ii) Depreciation for estimated period (from 1-4-2014 to 31-3-2015) = 12 months
 \therefore Dep. 3,00,000 pm. x 12 months.
 = 36,00,000
- 2) Notional Profit is ₹40,00,000 distributed between profit & Less A/c & Work in progress (Reserve).
 Notional Profit is ₹40,00,000
 Estimated Profit is ₹68,00,000
 For Profit & Loss A/c Formula is given in the problem as.

$$\text{Profit \& Loss A/c} = \text{Estimated Profit} \times \frac{\text{Work Certified as on 31-3-2014}}{\text{Total Contract Price}}$$

$$= 68,00,000 \times \frac{3,50,00,000}{6,80,00,000}$$

$$\text{Profit \& Loss A/c} = 35,00,000$$

Illustration : 5

Ratnagiri Construction Pvt. Ltd. provides you the following information:

- The project commenced on 1st May 2013 and it was estimated to be completed by 31st January 2015.
- The contract price was fixed at ₹2,70,00,000.
- The actual expenditure upto 31st March 2014 and subsequent additional estimated expenditure upto 31st January 2015 is furnished as under:

Particulars	Actual Exp. 1-5-13 to 31-3-14	Estimated Exp. 1-4-14 to 31-1-15
Work Certified (cumulative)	1,62,00,000	2,70,00,000
Cash Received	1,29,60,000	1,40,40,000
Work Uncertified	3,85,000	--
Direct Material	87,14,500	37,92,500
Direct Wages	17,47,500	18,58,500
Direct Expenses	8,44,400	4,32,600
Indirect Material	3,25,600	2,85,500
Supervision Charges	1,98,500	1,65,600
Administrative Overheads	9,47,600	8,54,600
Sub Contract Charges	1,87,900	1,80,200
Material Return to Stores	75,500	--
Architect Fees	3% of W. C.	3% of W.C.
RCC Consultant Fees	4% of W.C.	4% of W.C.
Plant Issued at Commencement	40,00,000	--
Material at site as on 31-03-2014	1,39,500	--

Other Information:-

- 1) The estimated value of the issued plant at the end of the project is to be ₹5,35,000.
- 2) It was decided that the profit to be taken credit for should be that proportion of the estimated net profit to be realized on completion of the contract which the certified value of work as on 31st March 2014, bears to the total contract price.

Prepare contract A/c for the period ended 31st March 2014 and show your calculation profit to be credited to Profit and Loss A/ for the period ended 31st March 2014.

Solution:-

Ratnagiri Construction Pvt. Ltd.**Contract Account****Dr****(From 1-5-13 to 31-3-15) 11 Months****Cr.**

Particulars	₹	Particulars	₹
To Direct Material	87,14,500	By Material Return to Store	75,500
To Direct Wages	17,47,500	<u>By Work in Progress</u>	
To Direct Expenses	8,44,400	Work Certified	1,62,00,000
To Indirect Material	3,25,600	Work Uncertified	3,85,000
To Supervision Charges	1,98,500	Material at Site	1,39,500
To Administrative Overheads	9,47,600		
To Sub Contract charges	1,87,900		
To Architect Fees (3% of 1,62,00,000)	4,86,000		
To RCC Consultant Fees (4% of 1,62,00,000)	6,48,000		
To Depreciation on Plant (1,65,000 p.m. x 11)	18,15,000		
To Notional Profit c/d	8,85,000		
	1,68,00,000		1,68,00,000
To Profit & Loss A/c	6,65,700	By Notional Profit b/d	8,85,000
To Work in Progress (Reserve)	2,19,300		
	8,85,000		8,85,000

Memorandum Contract A/c

Particulars	Actual Exp. (1-5-13 to 31-3-14) 11 Months	Estimated Exp. (1-4-14 to 31-1-15) 10 Months	Total Exp. 21 Months	Particulars	₹
To Direct Material	87,14,500	37,92,500	1,25,07,000	By Contractee's A/c (Full Contract Price)	2,70,00,000
To Direct Wages	17,47,500	18,58,500	36,06,000		
To Direct Exp.	8,44,400	4,32,600	12,77,000		
To Indirect Material	3,25,600	2,85,500	6,11,100		
To Supervision Charges	1,98,500	1,65,600	3,64,100		
To Administrative Overheads	9,47,600	8,54,600	18,02,200		
To Sub Contract Charges	1,87,900	1,80,200	3,68,100		
To Architect Fees	4,86,000	3,24,000	8,10,000		
To RCC Cons. Fees	6,48,000	4,32,000	10,80,000		
To Depreciation on Plant	18,15,000	16,50,000	34,65,000		
Total Exp.	1,59,15,000	99,75,500	2,58,90,500		
Estimated Profit			11,09,500		
			2,70,00,000		2,70,00,000

Working Note:-

i) Depreciation on Plant

$$\text{Depreciation} = \frac{\text{Original Cost} - \text{Scrap Value}}{\text{Estimated Life or Plant}}$$

Estimated Life of Plant =

1) Actual Period 1-5-13 to 31-3-14 = 11 Months

2) Estimated Period 1-4-14 to 31-1-15 = 10 Months
21 Months

$$\text{Dep.} = \frac{40,00,000 - 5,35,000}{21}$$

∴ Depreciation 1,65,000 p.m.

∴ Depreciation for Actual Period

= 1,65,000 x 11 Months = 18,15,000

∴ Depreciation for Estimated Period

= 1,65,000 x 10 Months = 16,50,000

ii) Transfer to Profit & Loss A/c Out of Notional Profit = 8,85,000

$$\therefore \text{Profit \& Loss A / c} = \text{Estimated Profit} \times \frac{\text{Work Certified as on 31-03-14}}{\text{Total Contract Price}}$$

$$= 11,09,500 \times \frac{1,62,00,000}{2,70,00,000}$$

Profit & Loss A/c = 6,65,700

iii) Work in Progress (Reserve)

= Notional Profit - Profit & Loss A/c (Reserve)

= 8,85,000 - 6,65,700

= 2,19,300

Many Contracts - (More than 1 Contract aa a time)

Illustration : 6

Mr. Bean Contractor has undertaken two contracts one at Mumbai and another at Thane. The details of the contracts are given below. For the year ended 31st March 2014.

Particulars	Contract at Mumbai	Contract at Thane
	01/07/2013	01/10/2013
	₹	₹
Contract Price	10,00,000	15,00,000
Direct Labour	2,55,000	1,82,000
Material Issued from Stores	2,20,000	2,00,000
Material Returned to Stores	10,000	15,000
Plant Installed at Site	2,00,000	3,50,000
Direct Expenses	40,000	30,000
Office Overheads	15,000	10,000
Material Sold (Cost ₹8,000)	10,000	-
Material at Site	18,000	16,000
Cash Received from Contractee (Representing 80% of Work Certified)	4,80,000	2,40,000
Work Uncertified	13,000	9,000
Architect Fees	7,000	3,000

i) Provide depreciation on plant at 20% p.a.

ii) During the year material costing ₹10,000 were transferred from Thane contract to Mumbai Contract.

You are required to prepare contract A/c of Mumbai and Thane Contract.

Solution:-

Mr. Bean Contractor			
Mumbai Contract A/c (1-7-13 to 31-3-14 - 9 Months)			
Dr.			Cr.
Particulars	₹	Particulars	₹
To Material Issued	2,20,000	By Material Returned	10,000
To Direct Labour	2,55,000	By Material Sold	8,000
To Direct Expenses	40,000	By Work in Progress c/d	
To Office Overhead	15,000	Work Certified (W.N)	6,00,000
To Architect Fees	7,000	Work Uncertified	13,000
To Depreciation on Plant	30,000	Material at Site	18,000
To Material from Thane Contract	10,000		
To Notional Profit Ltd	72,000		
	6,49,000		6,49,000
To Profit & Loss A/c	38,400	By Notional Profit b/d	72,000
To Work in progress (Reserve)	33,600		
	72,000		72,000

Working Note:-

i) Work Certified -

Cash Received being 80% of Work Certified - ₹4,80,000

$$\therefore \text{Cash Received} = 4,80,000 = 80\%$$

$$\therefore \text{Work Certified} = ? = 100$$

$$\therefore \text{Work Certified} = 4,80,000 \times \frac{100}{80}$$

$$\therefore \text{Work Certified} = 6,00,000$$

ii) Depreciation on Plant.

Total Contract Period is 9 Months (from 1-7-13 to 31-3-14)

$$\text{Depreciation} = 2,00,000 \times 20\% \times \frac{9}{12}$$

$$\text{Depreciation} = 30,000$$

iii) Out of Notional Profit ₹72,000 transfer to Profit & Loss A/c is calculated by finding out how much contract is completed between work certified with the contract price.

$$\text{Contract Price} = 10,00,000 = 100\%$$

$$\text{Work Certified} = 6,00,000 = ?$$

$$\therefore \text{Contract Completed} = 6,00,000 \times \frac{100}{10,00,000}$$

$$\therefore \text{Contract Completed} = 60\%.$$

\therefore Profit & Loss A/c transferred is calculated by following formula contract completed between 50-90%

$$\begin{aligned} \text{Profit \& Loss A / c} &= \frac{2}{3} \times \text{Notional Profit} \times \frac{\text{Cash Received}}{\text{Work Certified}} \\ &= \frac{2}{3} \times 72,000 \times \frac{4,80,000}{6,00,000} \end{aligned}$$

$$\text{Profit \& Loss A/c} = 38,400$$

iv) Work in Progress (Reserve) =
Notional Profit - Profit & Loss A/c
72,000 - 38,400 = 33,600

Thane Contract A/c
(From 1-10-2013 to 31-3-2014 - 6 Months)

Dr.

Cr.

Particulars	₹	Particulars	₹
To Material Issued	2,00,000	By Material Return	15,000
To Direct Labour	1,82,000	By Material Transferred to Mumbai Contract	10,000
To Direct Expenses	30,000	By Work in Progress c/d	
To Office Overheads	10,000	Work Certified	3,00,000
To Architect Fees	3,000	Work Uncertified	9,000
To Depreciation on Plant	35,000	Material at Site	16,000
		By Profit & Loss A/c (Loss)	1,10,000
	4,60,000		4,60,000

Working Note:-

i) Calculation of Depreciation on plant.

Contract Period is 6 months.

(From 01-10-2013 to 31-03-2014)

Depreciation = 3,50,000 x 20%

= 70,000 p.a.

∴ Dep. For 6 months = $70,000 \times \frac{6}{12}$

∴ Depreciation = 35,000

ii) Calculation of work certified :-

Cash Received ₹2,40,000 being 80% of work certified.

∴ Cash Received = 2,40,000 = 80%

Work Certified = ? = 100

∴ Work certified = $2,40,000 \times \frac{100}{80}$

∴ Work Certified = 3,00,000

Many Years → contract Completed in more than 1 year.

Illustration : 7

Ram contractor undertook a contract for ₹15,00,000 on 1st July 2012. The contract was completed on 31st March 2014. The contractor prepares his accounts as on 31st March. The details of the contract are:

Particulars	Period	
	1-7-12 to 31-3-13	1-4-13 to 31-3-14
Material Issued	1,52,000	3,30,000
Direct Wages	1,25,000	4,65,000
Direct Expenses	30,000	45,000
Material Returned to Stores	22,000	15,000
Material at Site	20,000	8,000
Uncertified Work	48,000	--
Office Overheads	23,000	66,000
Material Lost by Fire	--	5,000
Work Certified	3,00,000	15,00,000
Plant Issued	3,00,000	1,50,000

Provide depreciation @ 20% on plant. Prepare contract A/c for the year ended 31-03-2013 and 31-03-2014.

Solution:

Ram Contractors

Contract Account
(From 1-7-12 to 31-3-13 - 9 Months)

Dr.			Cr.
Particulars	₹	Particulars	₹
To Material Issued	1,52,000	By Material Returned to Store	22,000
To Direct Wages	1,25,000	<u>By Work in Progress</u>	
To Direct Expenses	30,000	Work Certified	3,00,000
To Office Overheads	23,000	Work Uncertified	48,000
To Depreciation on Plant	45,000	Material Site	20,000
To Notional Profit c/d	15,000		
	3,90,000		3,90,000
To Profit & Loss A/c	NIL	By Notional Profit b/d	15,000
To Work in Progress (Reserve)	15,000		
	15,000		15,000

Working Note:-

- i) Depreciation on Plant :
(Period or Contract 01-07-2012 to 31-03-13 - 9 Months)

$$\begin{aligned} \text{Depreciation} &= 3,00,000 \times 20\% \text{ p.a.} \\ &= 60,000 \text{ p.a.} \end{aligned}$$

$$\text{Depreciation for 9 Months} = 60,000 \times \frac{9}{12}$$

$$\text{Depreciation for 9 Months} = 45,000$$

- ii) Notional Profit - ₹15,000 out of transfer to Profit & Loss A/c is NIL.

Because contract completed is less than 25%. To find out contract completed compare with work certified to the contract price.

$$\therefore \text{Contract Price} = 15,00,000 = 100\%$$

$$\text{Work Certified } 3,00,000 = ?$$

$$\therefore \% \text{ of Contract Completed} = 3,00,000 \times \frac{100}{15,00,000} = 20\%$$

Dr. Contract Account Cr.
(From 1-4-13 to 31-3-14 - 12 Months)

Particulars	₹	Particulars	₹
To <u>Work in Progress</u> <u>b/d</u>		By Work in Progress b/d (Reserve)	15,000
Work Certified	3,00,000	By Material Returned	15,000
Work Uncertified	48,000	By Material at Site	8,000
Material at Site	20,000	By Material Lost by Fire	5,000
To Material Issued	3,30,000	By Contractee's A/c (Full Contract Price)	15,00,000
To Direct Wages	4,65,000		
To Direct Expenses	45,000		
To Office Overheads	66,000		
To Depreciation on Plant (WN)	81,000		
To Profit & Loss A/c (Profit)	1,88,000		
	15,43,000		15,43,000

Working Note:-

i) Depreciation on Plant:

Depreciation is calculated on WDV basic.

Plant which was used for 1 year its Opening Balance is	3,00,000
(-) Depreciation for 1 st Year	<u>45,000</u>
WDV of Plant	<u>2,55,000</u>

∴ Depreciation on 1st Plant

$$2,55,000 \times 20\% = \underline{51,000}$$

Depreciation on 2nd Plant

$$1,50,000 \times 20\% = \underline{30,000}$$

∴ Total Depreciation for 2 year is = 51,000 + 30,000 = 81,000

Many Contract (Opening W/P given)**Illustration : 8**

Navin Ltd has under taken three Contracts. It furnishes the following information for the year ended 31st March 2014:

Particulars	Goa Contract	Roha Contract	Surat Contract
1) Balances on 1/4/2013			
Material at Site	100	2,000	--
Uncertified Work	25,000	4,000	--
Plant at Site	22,000	3,100	--
Work Certified	19,500	1,400	--
Provision for Contingencies	10,000	600	--
2) Transactions During the Year:			
Material Issued	--	6,200	8,000
Subcontract Charges	600	11,800	9,000
3) Balances on 31-03-14			
Material at Site	--	1,000	800
Uncertified Work	--	1,000	3,850
Plant at Site	--	2,000	950
Work Certified	25,000	30,000	12,000
4) Contract Price	25,000	40,000	50,000
5) Amount Received	25,000	27,000	10,800

- 6) Value of Plant Transferred from Goa Contract to Surat Contract ₹1,550.
- 7) The Company consistently adopt the policy of taking credit for the contract profit considering the proportion of amounts received to the contract price.

You are required to:

- a) Prepare the respective contract accounts for the year ended 31st March 2014.
- b) Find the net profit as per profit & Loss A/c.

Solution:

	Navin Ltd		
Dr.	Goa Contract A/c		Cr.
Particulars	₹	Particulars	₹
To Opening Balance		By Provision for Contingencies b/d	1,000
<u>Work in Progress</u>		By Contractee's A/c (Full Contract Price)	25,000
Work Certified	19,500		
Work Uncertified	2,500		
Material at Site	100		
To Sub Contract Charges	600		
To Depreciation on Plant (WN)	650		
To Profit & Loss A/c (Profit)	2,650		
	26,000		26,000

Working Note:-

- i) Depreciation on Plant.

Op. Balance of Plant in Goa A/c	2,200
(-) Transferred to Surat Contract	1,550
Plant Depreciation of Goa Contract	650

Dr. **Roha Contract A/c** Cr.

Particulars	₹	Particulars	₹
To Opening Balance		By Provision for Contingencies b/d	600
<u>Work in Progress</u>		By <u>Work in Progress b/d</u>	
Work Certified	1,400	Work Certified	30,000
Work Uncertified	4,000	Work Uncertified	1,000
Material at Site	2,000	Material at Site	1,000
To Material Issued	6,200		
To Sub Contract Charges	11,800		
To Depreciation on Plant	1,100		
To Notional Profit b/d	6,100		
	<u>32600</u>		<u>32,600</u>
To Profit & Loss A/c	4,118	By Notional Profit b/d	6,100
To Work in Progress (Reserve)	1,982		
	<u>6,100</u>		<u>6,100</u>

Working Note:-

i) Depreciation on Plant at Roha Contract

Opening Balance of Plant	3,100
(-) Closing Balance of Plant	<u>2,000</u>
Depreciation on Plant	<u>1,100</u>

ii) Notional Profit ₹6,100, out of that Transfer to Profit & Loss A/c, specific instruction given in the problem

$$\text{Profit \& Loss A / c} = \text{Notional Profit} \times \frac{\text{Cash Received}}{\text{Contract Price}}$$

$$= 6,100 \times \frac{27,000}{40,000} = 4,118$$

$$\text{Profit \& Loss A/c} = 4,118$$

iii) Work in Progress (Reserve) = Notional Profit - Profit & Loss A/c 1982
= 6,100 - 4,118

Dr. **Surat Contract** Cr.

Particulars	₹	Particulars	₹
To Material Issued	8,000	By <u>Work in Progress c/d</u>	
To Sub Contract Charges	9,000	Work Certified	12,000
To Depreciation on Plant (1550 - 950)	600	Work Uncertified	3,850
		Material at Site	800
		By Profit & Loss A/c (Loss)	950
	17,600		17,600

Working Note:-

i) Depreciation on Plant for Surat Contract -

Plant Transform from Goa	1,550
Closing Plant at Surat	- 950
Depreciation on Plant	<u>600</u>

Dr. **Profit & Loss A/c** Cr.

Particulars	₹	Particulars	₹
To Surat Contract (Loss)	950	By Goa Contract (Profit)	2,650
To Net Profit c/d	5,818	By Roha Contract (Profit)	4,118
	6,768		6,768

4.6 EXERCISE

A. Objectives type Questions

Q.1 Multiple Choice Questions.

- Retention money is
 - Payment received – Work certified
 - Work certified – Cash received
 - Work certified – work uncertified
 - Contract price – Work certified

2. Work in progress is valued at cost plus profit which has been taken to the
 - A. Contract A'C
 - B. Profit and loss A'C
 - C. Contractees A/C
 - D. None of the above
3. If the contract completed 80% then transfer to profit and loss A'C out of
 - A. NIL
 - B. $1/3 * \text{Notional profit}$
 - C. $2/3 * \text{Notional profit}$
 - D. Entire profit
4. Cost of normal wastage of materials is
 - A. Debited to contract A'C
 - B. Credited to contract A/C
 - C. Debited to P & L A/C
 - D. Credited to P & L A/C
5. Cost of abnormal wastage of materials in a contract is transferred to the
 - A. Contract A/C
 - B. Costing profit and loss A/C
 - C. Profit and Loss A/C
 - D. None of the above
6. Cash received on contract is credited to
 - A. Contract A/C
 - B. Contractees A/C
 - C. Profit and Loss A/C
 - D. None of the above
7. If the contract price is RS. 10,00,000 work certified is 60 % ,the amount of the profit is 72,000 ,then the reserve will be RS .
 - A . RS. 33,600
 - B. RS.30,600
 - C.RS.32,200
 - D.RS. 40,000
8. If the contract completed is less than 20% then the amount of profit is transfer to P & L A/C
 - A. Full amount
 - B. 50%
 - C. NIL
 - D. 20%
9. Cash received is calculated by
 - A. Work certified - Retention money
 - B. Work certified x cash received as % of W.C.
 - C. Contract price x % of W.C. x % of cash received
 - D. All of the above
- 10 Notional profit is calculated by
 - A. Work certified – Cost of Work certified
 - B. Work certified –Work uncertified
 - C. Work certified – Cash received
 - D. Any of the above

**(Answers : 1. A 2. B 3. C 4. A 5. B 6. B 7. A 8.C
9. D 10. A)**

Q .2 True and False

1. Cash received = Value of work certified – Retention money
2. Cost of material transferred from one contract to another contract , the contract A/C which receives the material is credited to the particular contract A/C.
3. Contractor is the person who undertakes the contract.
4. Contertee is the person who undertakes the contract.
5. Sale of plant , the sale price is debited to the contract A/C.
6. Under capital method, the amount of depreciaton is debited to contract A/C.
7. Cash received is credited to the contract A/c.
8. If the contract is 100 % completed ,then the entire profit is transferred to P & L A/C.
9. The cost of material issued by stores is debited to the contract A/c.
10. Work certified is that portion of the work completed which has been certified by the contractee's architect .

(Answers: True : 1,3,8,9,10 False : 2,4,5,6,7.)

B. Practical Problem:-

Q.1 Jai Hind Construction Company under took the construction of a building at a contract price of ₹2,00,00,000.

The Date of Commencement of contract was 1st May 2013.
The following cost information is given for the period ended 31st March 2014:

- 1) Direct Material Sent to the Site - 5,000 tons @ ₹1.50 per kg.
- 2) Indirect Material ₹6,50,000.
- 3) Direct Labour - 12,000 Mandays @ ₹180 per Monday.
- 4) Indirect labour charged at 7.5% of Direct Labour.
- 5) sub Contract Charges Charged at 15% of Indirect Materials.
- 6) Direct Materials returned to stores 20 tons.
- 7) Direct Material lost in an accident 5 tons.
- 8) Supervision charges paid ₹8,000 per month.
- 9) Administrative Overheads incurred ₹12,000 per month.
- 10) Architect Fees Charged at 2% of Work Certified.
- 11) Plant & Machinery installed at site on the date of commencement of contract at a cost of ₹15,00,000. Which is to be depreciated @ 12% p.a. under original cost method.

- 12) Cash received from contractee ₹1,26,00,000 which is equal to 90% of work certified.
- 13) Direct Material at site as on 31st March 2014 - 15.
- 14) Cost of work done but not certified was ₹2,04,500 on 31st March 2014.

You are required to prepare a contract Account for the period ended 31st March 2014, in the books of Jai Hind Construction Company and show what profit or loss should be taken into account for the period ended 31st March 2014.

Q.2 R. Limited commenced a contract on 01-07-2013. The Total contract price was ₹5,00,000 but R Limited accepted the same for ₹4,50,000. It was decided to estimate the total profit and to take to the credit of profit & Loss A/c that proportion of estimated profit on cash basis which the work completed and certified borne to the total contract. Actual expenditure till 31-12-2013 and estimated expenditure in 2014 are given below.

Particulars	Accruals	Estimate for 2014
	₹	₹
Material	75,000	1,30,000
Labour	55,000	60,000
Plant Purchased (Original Cost)	40,000	--
Miscellaneous Expenses	20,000	35,500
Plant Returned to Stores (at Original Cost)	10,000	25,000
Material at Site	5,000	--
Work Certified	2,00,000	Full
Work Uncertified	7,500	--
Cash Received	1,80,000	Full

The plant is subjected to annual depreciation @ 20% of original cost. The contract is likely to be completed on 30-09-2014.

You are required to prepare the contract A/c for the year ended 31-12-2013. Working showed be clearly given.

It is the policy of the company to charge depreciation on time basis.

Q.3 Raj and Company has undertaken two contract viz. A and B. The following particulars are available for the year ended 31st March 2014.

Particulars	Contract A	Contract B
Date of Commencement	01-07-2013	01-12-2013
Contract Price	6,00,000	5,00,000
Material Sent to Site	1,60,000	60,000
Material Returned	4,000	2,000
Closing Stock of Material at Site	22,000	8,000
Direct Labour	1,50,000	42,000
Direct Expenses	66,000	35,000
Establishment Expenses	25,000	7,000
Plant Installed at Site	80,00	72,000
Work Uncertified	23,000	10,000
Work Certified	4,20,000	1,35,000
Architect Fees	2,000	1,000

During the year Material Costing ₹9,000 have been transferred from contract A to contract B. The contractor charges depreciation @ 25% p.a. on plant.

You are required to prepare contract A/c, working for profits, if any, and show how the relevant items would appear in the Balance Sheet Assuming that contractee had paid 90% of the work certified.

Q.4 M/s Jadhav constructions under took contract For ₹5,00,00,000 on 1st August 2012. The contract was completed on 31st March 2014. The contractor closes his accounts on 31st March. The details of the contract are as follows:

Particulars	For the Period ended 31-03-13	For the Period ended 31-03-14
	₹	₹
Material Issued	95,48,500	1,17,65,000
Direct Labour	31,37,800	45,40,000
Sub Contract Charges	7,88,900	28,13,000
Administrative Overheads	15,85,400	31,42,000
Supervision Charges	3,45,600	8,05,500
Material Returned to Stores	1,32,400	2,44,300
Work Uncertified	5,23,200	--
Work Certified (Cumulative)	2,00,00,000	5,00,00,000
Material at Site	1,00,600	--
Cash Received	1,80,00,000	3,20,00,000
Architect Fees	4% of Work Certified	4% of Work Certified

The Plant and Machinery purchased on 01/08/2012 for the contract was ₹84,25,000 and the estimated scrap value of the plant and machinery at the end of the contract was ₹4,25,000. It realized on completion of contract at its estimated scrap value.

You are required to prepare:

- a) Contract A/c for the period indeed 31st March 2013 and
- b) Contract A/c for the year ended 31st March 2014.

Q.6 Parna Kutir Ltd. furnishes you with the following information for the year ended 31st March 2013 and 31st March 2014.

Particulars	31-03-2013	31-03-2014
Material Issued	13,000	24,700
Sub - Contract Charges	4,500	20,000
Value of Work Certified During the year	20,000	80,000
Closing Stock of Material at Site	3,000	--

To Total contract Price is ₹1,00,000. The entire amount was received by 31st March 2014. As per the accounting policy adopted by the company no profit is to be considered unless the value of the work certified at the year end excess 25% of the contract price.

Prepare contract account for the years ended 31st March 2013 and 31st March 2014.



PROCESS COSTING

Unit Structure :

- 5.0 Objectives
- 5.1 Introduction
- 5.2 Costing Procedure
- 5.3 Treatment to Several Items
- 5.4 Format of Process A/C
- 5.5 Solved Problems
- 5.6 Exercises

5.0 OBJECTIVES

After studying the unit the students will be able to:

- Understand the meaning and costing procedure of Process Costing
- Know how to Normal and Abnormal process losses and Abnormal Gains.
- Calculate Process Cost per unit.
- Solve the problems on process costing.

5.1 INTRODUCTION

A process means a difference manufacturing operation or stages. When a product is produced, it means a raw material will be converted into finished product it is passes through difference stages, it is called as a process.

Process costing means to find out the cost or each process. For eg. - if a product passes through 3 processes at that time we have a find out the cost of each process.

5.2 COSTING PROCEDURE

Under Process Costing following procedures are as follows:

1) **Separate Process A/c:-**

Under process costing different process accounts are prepared, it means how many process are given separate process A/c is prepared.

2) Debit Side of Process A/c:-

Under each process the cost of each process divided as follows:-

- i) Material : Whatever Material used for each process is debited to a Particular Account.
- ii) Labour : Whatever labour used or wages paid to worker are debited to the particular process A/c.
- ii) Overheads : Whatever expenses or overhead paid for particular process are debited to that A/c.

3) Credit Side of Process A/c:-

Any sale of scrap related to a particular process are credited to process A/c.

4) Cost of Process:-

To find out the net cost of process is total of Debit side Less Credit Side of process A/c which gives the net cost of a particular process i.e. (Total expenses (Dr. Side) - Sale or scrap (Cr. Side)).

5.3 TREATMENT TO SEVERAL ITEMS**5.3.1 PROCESS LOSS:-**

In many process, there is a weight loss. It means under any process there is surety of some % of loss on input. If there are total three process, we introduced input in process I, then there is surety that same % of loss on that input whatever balance transfer to next process i.e. process II. Again in process II if there is weight loss, and balance transfer to next process i.e. process III again in process III there is weight loss what balance is an actual output.

The loss may be divided into two categories.

- i) Normal Loss
- ii) Abnormal Loss.

i) Normal Loss :-

Under any process, before production we assume that there is a loss under each process which is called as normal loss. It is already assume before production process start.

ii) Abnormal Loss:-

As per above we can say that before production, assume some % of loss i.e. weight loss or normal loss. But after the production if there is an increase in normal loss, it means loss is over and above expectation is called as abnormal loss.

Normal Loss A/c

Particulars	Units	Rate	₹	Particulars	Units	Rate	₹
To Process I				By Actual <u>Sale</u>			
To Process II				Process I			
To Process III				II			
				III			
				By Abnormal Gain (Process III)			

Abnormal Loss A/c

Particulars	Units	Rate	₹	Particulars	Units	Rate	₹
To Process II				By Actual Sales			
				Process II			
				By Costing P & L A/c			

Abnormal Gain A/c

Particulars	Units	Rate	₹	Particulars	Units	Rate	₹
To Normal Loss				By Process III A/c			
To Costing Profit & Loss A/c							

Quantity Reconciliation

Particulars	I	II	III
Input			
(-) Normal Loss			
Expected Output			
(-) Actual Output			
Abnormal Loss / Gain			

- ❖ Abnormal Loss = Actual Output is Less than the expected Output.
- ❖ Abnormal Gain = Actual output is more than the expected output.

5.5 SOLVED PROBLEMS

Illustration : 1

Samar Ltd. manufactures a product which passes through two consecutive process viz. Purvardha and Uttarardha. The company provides you with the following information for the year ended 31st March 2014.

Particulars	Purvardha	Uttarardha
Basic Material	5000 units	--
Rate Per Unit	₹2.20	--
	₹	₹
Process Material	4,000	3,000
Wages	3,000	4,000
Factory Overheads	2,000	2,630
Process Loss as percentage of input	10%	10%
Scrap Value of process loss (per 100 units)	40	60

Prepare Process A/c and other relevant accounts.

The entire output of Uttarardha process was sold for ₹30,000.

Solution:-

Quantity Reconciliation

Particulars	Purvardha	Uttarardha
Input	5,000	4,500
(-) Normal Loss	500	450
Expected / Actual Output	4,500	4,050

Purvardha Process A/c

Particulars	Units	Rate	₹	Particulars	Units	Rate	₹
To Material	5,000	2.20	11,000	By Normal Loss	500	0.40	200
To Process Material			4,000				
To Wages			3,000	By Transfer to Uttarardha Process	4,500	4.40	19,800
To Factory Overheads			20,000				
	5,000		20,000		5,000		20,000

$$\text{Cost Per Units} = \frac{\text{Total Cost} - \text{Scrap Value or Normal Loss}}{\text{Input} - \text{Normal Loss}}$$

$$= \frac{20,000 - 200}{5,000 - 500} = \frac{19,800}{4,500} = 4.40$$

Uttarardha Process A/c

Particulars	Units	Rate	₹	Particulars	Units	Rate	₹
To Transfer from Purvardha Process	4,500	4.40	19,800	By Normal Loss	450	0.60	270
To Process Material			3,000	By Output c/d	4,050	7.20	29,160
To Wages			4,000				
To Factory Overheads			2,630				
	4,500		29,430		4,500		29,430
To Output b/d	4,050	7.20	29,160	By Sale	4,050		30,000
To Costing P/L A/c			840				
	4,050		30,000		4,050		30,000

$$\text{Cost Per Units} = \frac{\text{Total Cost} - \text{Scrap Value of Normal Loss}}{\text{Input} - \text{Normal Loss Units}}$$

$$= \frac{29,430 - 270}{4,500 - 450} = \frac{29,160}{4,050} = ₹7.20$$

Illustration : 2

Y Ltd. Manufacture a Chemical product which passes through three process. The cost records show the following particulars for the year ended 30th June 2014.

Particulars	Process I	Process II	Process III
Material	48,620	1,08,259	1,03,345
Labour	32,865	84,553	77,180
Expenses	2,515	10,588	16,275
Normal Loss	20%	15%	10%
Scrap Value Per Unit	1	2	3
Actual Output (Units)	18,000	16,000	15,000

Input to Process I 20000 Units @ ₹28 per unit. Prepare Process Accounts, Abnormal gain / Loss A/c Also show process cost per unit for each process.

Solution:-

Quantity Reconciliation

Particulars	I	II	III
Input	20,000	18,000	16,000
(-) Normal Loss	4,000	2,700	1,600
Expected Output	16,000	15,300	14,400
(-) Actual Output	18,000	16,000	15,000
Abnormal	2,000	700	600
	Gain	Gain	Gain

Process I A/c

Particulars	Units	Rate	₹	Particulars	Units	Rate	₹
To Input	20,000	28	5,60,000	By Normal Loss	4,000	1	4,000
To Material			48,620	By Transfer To Process II	18,000	40	7,20,000
To Labour			32,865				
To Expenses			2,515				
To Abnormal Gain	22,000	40	80,000				
	22,000		7,24,000		22,000		7,24,000

$$\text{Cost Per Units} = \frac{\text{Total Cost} - \text{Normal Loss Scrap Value}}{\text{Input} - \text{Normal Loss Units}} = \frac{6,44,000 - 4,000}{20,000 - 4,000} = \frac{6,40,000}{16,000} = 40$$

Process II A/c

Particulars	Units	Rate	₹	Particulars	Units	Rate	₹
To Transfer				By Normal Loss	2,700	2	5,400
From Process I	18,000	40	7,20,000	By Transfer to Process III A/c	16,000	60	9,60,000
To Material			1,08,259				
To Labour			84,553				
To Expenses			10,588				
To Abnormal Gain	700	60	42,000				
	18,700		9,65,400		18,700		9,65,400

$$\text{CPU} = \frac{9,23,400 - 5,400}{18,000 - 2,700} = \frac{9,18,000}{15,300} = 60$$

Process III A/c

Particulars	Units	Rate	₹	Particulars	Units	Rate	₹
To Transfer from Process II	16,000	60	9,60,000	By Normal Loss	1,600	3	4,800
To Material			1,03,345	By Output (Finished Stock A/c)	15,000	80	12,00,000
To Labour			77,180				
To Expenses			16,275				
To Abnormal Gain	600	80	48,000				
	16,600		12,04,800		16,600		12,04,800

$$\text{CPU} = \frac{11,56,800 - 4,800}{16,000 - 1,600} = \frac{11,52,000}{14,400} = 80$$

Normal Loss A/c

Particulars	Units	Rate	₹	Particulars	Units	Rate	₹
To Process I	4,000	1	4,000	By Actual Sale			
To Process II	2,700	2	5,400	Process I	2,000	1	2,000
To Process III	1,600	3	4,800	II	2,000	2	4,000
				III	1,000	3	3,000
				By Abnormal Gain			
				Process I	2,000	1	2,000
				II	700	2	1,400
				III	600	3	1,800
	8,300		14,200		8,300		14,200

Abnormal Gain A/c

Particulars	Units	Rate	₹	Particulars	Units	Rate	₹
To Normal Loss A/c				By Actual Sales			
Process I	2,000	1	2,000	Process I	2,000	40	80,000
II	700	2	1,400	II	700	60	42,000
III	600	3	1,800	III	600	80	48,000
To Costing Profit & Loss A/c			1,64,800				
	3,300		1,70,000		3,300		1,70,000

Illustration : 3

Product A is manufactured after it passes through three distinct processes. The following information is obtained from the records of a company for the year ended 31st December 2013.

Particulars	Process I	Process II	Process III
Direct Material	2,500	2,000	3,000
Direct Wages	2,000	3,000	4,000
Output during the week	950	840	750
Percentage of Normal Loss to Input	5%	10%	15%
Value or Scrap Per Unit ₹	3/-	5/-	5/-

Product Overheads are ₹9,000. 1000 Units at ₹5 each were introduced to process I. There was no stock or materials or work in progress at the beginning and at the end of the year. The output of each process passes direct to the next process and finally to the finished stock A/c. Production overheads are recovered on 100% of direct wages.

Prepare Process Cost Accounts and Abnormal Gain or Loss Account for the year ended 31st December, 2013.

Solution:-

Quantity Reconciliation

Particulars	Process I	Process II	Process III
Input	1,000	950	840
(-) Normal Loss	50	95	126
Expected Output	950	855	714
(-) Actual Output	950	840	750
Abnormal	NIL	15	36
		Loss	Gain

Process I A/c

Particulars	Units	Rate	₹	Particulars	Units	Rate	₹
To Input	1,000	5	5,000	By Normal Loss	50	3	150
To Direct Material			2,500	By Transfer to Process II A/c	950	11.95	11,350
To Wages			2,000				
To Product Overheads			2,000				
(100% of Wages)							
	1,000		11,500		1,000		11,500

$$\text{Cost Per Units} = \frac{\text{Total Cost} - \text{Normal Loss Scrap Value}}{\text{Input} - \text{Normal Loss Units}}$$

$$= \frac{11,500 - 150}{1,000 - 50} = \frac{11,350}{950} = 11.95$$

Process II A/c

Particulars	Units	Rate	₹	Particulars	Units	Rate	₹
To Transfer from Process I	950	11.95	11,350	By Normal Loss	95	5	475
To Material			2,000	By Abnormal Loss	15	22.07	331
To Wages			3,000	By Process III A/c Transfer	840	22.07	18,544
To Product Overheads			3,000				
	950		19,350		950		19,350

$$\text{Cost Per Unit} = \frac{19350 - 475}{950 - 95} = \frac{18875}{855} = 22.07$$

Process III A/c

Particulars	Units	Rate	₹	Particulars	Units	Rate	₹
To Transfer from Process II	840	22.07	18,544	By Normal Loss	126	5	630
To Material			3,000	By Finished Stock A/c	750	40.49	30,372
To Wages			4,000				
To Product Overheads			4,000				
To Abnormal Gain	36	40.49	1,458				
	876		31,002		876		31,002

$$\text{Cost Per Unit} = \frac{29,544 - 630}{840 - 126} = \frac{28,914}{714} = 40.49$$

Normal Loss A/c

Particulars	Units	Rate	₹	Particulars	Units	Rate	₹
To Process I	50	3	150	By Actual Sales			
To Process II	95	5	475	Process I	50	3	150
To Process III	126	5	630	Process II	95	5	475
				Process III	90	5	450
				By Abnormal Gain Process III	36	5	180
	271		1,255		271		1,255

Abnormal Loss A/c

Particulars	Units	Rate	₹	Particulars	Units	Rate	₹
To Process II	15	22.07	331	By Actual Sales	15	5	75
				Process II By Costing Profit & Loss A/c			256
	15		331		15		331

Abnormal Gain A/c

Particulars	Units	Rate	₹	Particulars	Units	Rate	₹
To Actual Sale Process III	36	5	180	By Process III	36	40.49	1,458
To Costing Profit & Loss A/c			1,278				
	36		1,458		36		1,458

PARTLY OUTPUT - TRANSFER / STOCK / SALE

After completing each and every process, partly material either sold or transfer to next process and finally from last process 100% material or output will be sold or transfer to warehouse.

Illustration : 4

M/s XYZ and company manufacture a chemical which passes through three processes. The following particulars gathered for the month of January, 2014.

Particulars	Process I	Process II	Process III
Material (Litre)	400	208	168
Material Cost	₹38,400	₹18,800	₹6,000
Wages	₹7,680	₹7,600	₹2,200
Normal Loss (% of input)	4%	5%	5%
Scrap Sale Value	--	₹3 Per Ltr.	--
Output Transferred to Next Process	50%	40%	--
Output Transferred to ware houses	50%	60%	100%

Overheads are charged @ 50% of Direct Wages. You are required to prepare Process Account.

Solution:-

Quantity Reconciliation

Particulars	Process I	Process II	Process III
Transfer from Process	-	192	152
(+) Input	400	208	168
Total	400	400	320
(-) Normal Loss	16	20	16
	384	380	304
Transfer to Next Process →	192	152	--
Transfer to Warehouse →	192	228	304

Process I A/c

Particulars	Ltr	Rate	₹	Particulars	Ltr	Rate	₹
To Material	400		38,400	By Normal Loss	16	--	--
To Wages			7,680	By Transfer to Next Process (50%)	192	130	24,960
To Overheads (50% of wages)			3,840	By Transfer to Warehouse (50%)	192	130	24,960
	400		49,920		400		49,920

$$\text{Cost Per Unit} = \frac{\text{Total Cost} - \text{Scrap Value of Normal Loss}}{\text{Input} - \text{Normal Loss Units}}$$

$$\text{C. P. U.} = \frac{49,920 - \text{Nil}}{400 - 16} = \frac{49,920}{16} = 130$$

Process II A/c

Particulars	Ltr	Rate	₹	Particulars	Ltr	Rate	₹
To Transfer from Process II	192	130	24,960	By Normal Loss	20	3	60
To Material	208		18,800	By Transfer to Next Process III (40%)	152	145	22,040
To Wages			7,600	By Transfer to Warehouse (60%)	228	145	33,060
To Overheads (50% of wages)			3,800				
	400		55,160		400		55,160

$$\text{Cost Per Unit} = \frac{55,160 - 60}{400 - 20} = \frac{55,100}{380} = 145/-$$

Process III A/c

Particulars	Ltr	Rate	₹	Particulars	Ltr	Rate	₹
To Transfer from Process II	152	145	22,040	By Normal Loss	16	--	--
To Material	168		6,000	By Transfer to Warehouse (100%)	304	103.09	31,340
To Wages			2,200				
To Overheads (50% of wages)			1,100				
	320		31,340		320		31,340

$$\text{Cost Per Unit} = \frac{31,340 - \text{Nil}}{320 - 16} = \frac{31,340}{304} = 103.09$$

❖ **Output Partly Sold and Partly Transferred to Next Process.**

Illustration : 5

KT Ltd. provides you the following information for the year ended 31st March 2014.

Particulars	Process A	Process B	Process C
Raw Material (Units)	12,000	2,440	2,600
Cost of Raw Material Per Unit (₹)	5	5	5
Direct Wages ₹	34,000	24,000	15,000
Production Overheads ₹	16,160	16,200	9,600
Normal Loss (% of Total No. of Units entering to the process)	4%	5%	3%
Wastage (% of Total No. of Units Entering to the Process)	6%	5%	4%
Scrap Per Unit of Wastages ₹	3	4	5
Output Transferred to Subsequent Process	70%	60%	--
Out Sold at the End of the Process	30%	40%	100%
Selling Price Per Unit ₹	12	16	17

Prepare Process A, B and C.

Solution:-

Quantity Reconciliation

Particulars	Process A	Process B	Process C
Input	12,000	2,440	2,600
(+) Transfer from Process	--	7,560	5,400
Total	12,000	10,000	8,000
(-) Normal Loss	480	500	240
(-) Wastage	720	500	320
	10,800	9,000	7,440
→ Transfer to Next Process	7,560	5,400	--
→ Partly Sold	3,240	3,600	7,440 Sold

Process A A/c

Particulars	Units	Rate	₹	Particulars	Units	Rate	₹
To Material	12,000	5	60,000	By Normal Loss	480	--	--
To Wages			34,000	By Wastage	720	3	2,160
To Production Overheads			16,160	By Output c/d	10,800	10	1,08,000
	12,000		1,10,160		12,000		1,10,160
To Output b/d	10,800	10	1,08,000	By Transfer to Process B (70%)	7,560	10	75,600
To Costing Profit & Loss A/c (Profit)			6,480	By Sold (30%)	3,240	12	38,880
	10,800		1,14,480		10,800		1,14,480

Process B A/c

Particulars	Units	Rate	₹	Particulars	Units	Rate	₹
To Process A	7,560	10	75,600	By Normal Loss	500	--	--
To Material	2,440	5	12,200	By Wastage	500	4	2,000
To Wages			24,000	By Output c/d	9,000	14	1,26,000
To Overheads			16,200				
	1,000		1,28,000		10,000		1,28,000
To Output b/d	9,000	14	1,26,000	By Transfer to Process C / 60%)	5,400	14	75,600
To Costing Profit & Loss A/c (Profit)			7,200	By Sold (40%)	3,600	16	57,600
	9,000		1,33,200		9,000		1,33,200

Process C A/c

Particulars	Units	Rate	₹	Particulars	Units	Rate	₹
To Process B	5,400	14	75,600	By Normal Loss	240	--	--
To Material	2,600	5	13,000	By Wastage	320	5	1,600
To Wages			15,000	By Sales	7,440	17	1,26,480
To Overheads			9,600				
To Costing Profit & Loss A/c (Profit)			14,880				
	8,000		1,28,080		8,000		1,28,080

Illustration : 6

Assemblers Ltd. have three Assembly shop viz. General Assembly, Lower Assembly and Higher Assembly. Part of the output is transferred to the next assembly and part is sold directly. The company furnished the following in formations.

Particulars	General	Lower	Higher
Raw Material (In Ltrs)	5,000	1,920	3,576
Material Cost Per Ltr.	₹60	₹40	₹80
Labour Cost	4,28,000	1,06,000	2.10.000
Direct Expenses	88,000	2,85,200	1,04,800
Wastage as percentage of Total input	4%	5%	10%
a) Output Transferred			
To Lower Assembly	60%	--	--
To Higher Assembly	--	40%	--
b) Output Sold in Market	40%	60%	100%
Sales Price Per Ltr.	₹200	₹205	₹250

Administrative Overheads - ₹36,000

Marketing Overhead - ₹48,000

Prepare Various Assembly A/c and costing Profit & Loss A/c

Solution :

Quantity Reconciliation

Particulars	General	Lower	Higher
Input	5,000	1,920	3,576
(+) Transfer from Process	--	2,880	1,824
Total	5,000	4,800	5,400
(-) Normal Loss	200	240	540
Actual Output	4,800	4,560	4,860
(-) Sold Out	1,920	2,736	4,860
(-) Transfer to Next Process	2,880	1,824	--

General Process A/c

Particulars	Ltrs	Rate	₹	Particulars	Ltrs	Rate	₹
To Material	5,000	60	3,00,000	By Normal Loss (Wastage)	200	--	--
To Labour			4,28,000	By Output c/d	4,800	170	8,16,000
To Direct Exp.			88,000				
	5,000		8,16,000		5,00		8,16,000
To Output b/d	4,800	170	8,16,000	By Transfer to Lower	2,880	170	4,89,600
To Costing P/L A/c (Profit)			57,600	By Sales	1,920	200	3,84,000
			8,73,600				8,73,600

Lower Assembly A/c

Particulars	Ltrs	Rate	₹	Particulars	Ltrs	Rate	₹
To General Assembly Transfer	2,880	170	4,89,600	By Wastage	240	--	--
To Material	1,920	40	76,800	By Output c/d	4,560	210	9,57,600
To Labour			1,06,000				
To Direct Exp			2,85,200				
	4,860		9,57,600		4,860		9,57,600
To Output b/d	4,560	210	9,57,600	By Transfer to Higher	1,824	210	3,83,040
				By Sales	2,736	505	5,60,880
				By Costing P/L A/c (Loss)			13,680
	4,560		9,57,600		4,560		9,57,600

Higher Assembly A/c

Particulars	Ltrs	Rate	₹	Particulars	Ltrs	Rate	₹
To Lower Assembly A/c (Transfer)	1,824	210	3,83,040	By Wastage	540	--	--
To Material	3,576	80	2,86,080	By Output c/d	4,860	202.45	9,83,920
To Labour			2,10,000				
To Direct Exp.			1,04,800				
	5,400		9,83,920		5,400		9,83,920
To Output b/d	4,860	202.45	9,83,920	By Sales	4,860	250	12,15,000
To Costing P/L A/c (Profit)			2,31,080				
	4,860		12,15,000		4,860		12,15,000

$$\text{Cost Per Unit} = \frac{\text{Total Cost} - \text{Normal Loss Scrap Value}}{\text{Input} - \text{Normal Loss (Units)}}$$

$$\begin{aligned} \text{General Assembling} &= \frac{8,16,000 - \text{Nil}}{5,000 - 200} \\ &= \frac{8,16,000}{4,800} = 170 \end{aligned}$$

$$\begin{aligned} \text{Lower Assembly} &= \frac{9,57,600 - \text{Nil}}{4,800 - 240} \\ &= \frac{9,57,600}{4,560} = 210 \end{aligned}$$

$$\begin{aligned} \text{Higher Assembly} &= \frac{9,83,920 - \text{Nil}}{5,400 - 540} \\ &= \frac{9,83,920}{4,860} = 202.45 \end{aligned}$$

Costing Profit & Loss A/c

Particulars	₹	Particulars	₹
To Lower Assembly	13,680	By General Assembly	57,600
To Administrator Overheads	36,000	By Higher Assembly	2,31,080
To Marketing Overheads	48,000		
To Net Profit c/d	1,91,000		
	2,88,680		2,88,680

Process Stocks:-

Under Process Costing, Whatever output of each and every process is transfer to next process or sold out partly or entirely transfer to next process and after completion of process at the end the output is sold. But when there is process stock given then the entire output of a particular process would be transfer to particular process stock A/c, then added opening stock and deducting closing stock whatever balance remain it transfer to next process. For eg. In a process a input are 1000 units normal loss is 50 units. Process stock A/c shows opening balance 100 units, closing stock is 150 units then transfer to next process is calculated as

Input	-	1000	
(-) Normal Loss	-	<u>50</u>	
Expected Output	-	950	Actual Output
(+) Opening Stock	-	<u>100</u>	
		1,050	
(-) Closing Stock	-	<u>150</u>	
		<u>900</u>	- Transfer to Next Process

Illustration : 7

Reliance Yarn Ltd. manufactures a yarn product. The product passes through three consecutive processes F.Y., S. Y., and T. Y., Relevant details for the months of March 2014 are as under:

Particulars	F. Y.	S. Y.	T. Y.
Quantitative in Formation in Kg.			
Basic input kg @ 10 Per Kg.	2000	--	--
Output during the month	1950	1925	1679
Stock of Process			
- On 1 st March 2014	200	300	100
- On 31 st March 2014	150	400	59
% of Normal Loss to input in process	2%	5%	8%
Monetary Information	₹	₹	₹
Process Material	9000	2100	2716
Wages	9064	1860	4000
Value or Opening Stock	3880	6720	2800
Scrap Value per kg	₹1	₹2	₹4

Closing Stock is to be valued at the respective cost of each process.

Prepare process A/c, Process Stock A/c, Abnormal Loss and Abnormal Gain A/c. Find out the costing profit, when the sales out of T.Y. Process Stock are made at ₹40 per kg.

Solution:**Quantity Reconciliation**

	Particulars	F. Y.	S. Y.	T. Y.
	Input	2000	2000	1825
(-)	Normal Loss	40	100	146
	Expected Output	1960	1900	1679
(-)	Actual Output	1950	1925	1679
	Abnormal Loss / Gain	10 (Loss)	(25) Gain	-
	Actual Output	1950	1925	1679
(+)	Opening Stock	200	300	100
(-)	Closing Stock	(150)	(400)	(59)
	Transfer to Next Process	2000	1825	1720 Sold

F. Y. Process A/c

Particulars	Kgs.	Rate	₹	Particulars	Kgs.	Rate	₹
To Input	2000	10	20,000	By Normal Loss	40	1	40
To Material			9,000	By Abnormal Loss	10	19.40	194
To Wages			9,064	By Transfer to F.Y. Process Stock A/c	1950	19.40	37,830
	2000		38,064		2000		38,064

$$\text{Cost Per Unit} = \frac{\text{Total Cost} - \text{Normal Loss Scrap Value}}{\text{Input} - \text{Normal Loss Units}}$$

$$= \frac{38064 - 40}{2000 - 40} = \frac{38024}{1960} = 19.40$$

F. Y. Process Stock A/c

Particulars	Kgs.	Rate	₹	Particulars	Kgs.	Rate	₹
To Balance b/d	200	19.40	3,880	By Transfer to S. Y. Process A/c	2000	19.40	38,800
To Transfer From F. Y. Process	1950	19.40	37,830	By Balance c/d	150	19.40	2,910
	2150		41,710		2150		41,710

S. Y. Process A/c

Particulars	Kgs.	Rate	₹	Particulars	Kgs.	Rate	₹
To Transfer from F. Y. Process Stock	2000	19.40	38,800	By Normal Loss	100	2	200
To Material			2,100	By Transfer to S. Y. Process Stock A/c	1925	22.40	43,120
To Wages			1,860				
To Abnormal Gain	25	22.40	560				
	2025		43,320		2025		43,320

S. Y. Process Stock A/c

Particulars	Kgs.	Rate	₹	Particulars	Kgs.	Rate	₹
To Balance b/d	300	22.40	6,720	By Transfer to T. Y. Process	1825	22.40	40,880
To Transfer from S. Y. Process	1925	22.40	43,120	By Balance c/d	400	22.40	8,960
	2225		49,840		2225		49,840

$$\begin{aligned} \text{S.Y. Process} &= \frac{42760 - 200}{2000 - 100} \\ &= \frac{42560}{1900} = 22.40 \end{aligned}$$

T. Y. Process A/c

Particulars	Kgs.	Rate	₹	Particulars	Kgs.	Rate	₹
To Transfer from S. Y. Process Stock A/c	1825	22.40	40,880	By Normal Loss	146	4	584
To Material			2,716	By Transfer to T. Y. Process Stock A/c	1679	28	47,012
To Wages			4,000				
	1825		47,596		1825		47,596

T. Y. Process Stock A/c

Particulars	Kgs.	Rate	₹	Particulars	Kgs.	Rate	₹
To Transfer from T. Y. Process A/c	1679	28	47,012	By Transfer to Costing P/L A/c	1720	28	48,160
To Bal b/d	100	28	2,800	By Balance c/d	59	28	1,652
	1779		49,812		1779		49,812

$$\text{Cost Per Unit} = \frac{\text{Total Cost} - \text{Normal Loss Scrap}}{\text{Input} - \text{Normal Loss Units}}$$

$$\text{T.Y. Process} = \frac{\text{Value} \quad 47596 - 584}{1825 - 146} = \frac{47012}{1679} = 28$$

Normal Loss A/c

Particulars	Kgs.	Rate	₹	Particulars	Kgs.	Rate	₹
To F. Y. Process	40	1	40	By Actual Sales			
To S. Y. Process	100	2	200	F. Y. Process	40	1	40
To T. Y. Process	146	4	584	S. Y. Process	75	2	150
				T. Y. Process	146	4	584
				By Abnormal Gain			
				Process S. Y.	25	2	50
	286		824		286		824

Abnormal Loss A/c

Particulars	Kgs.	Rate	₹	Particulars	Kgs.	Rate	₹
To F. Y. Process	10	19.40	194	By Actual Sales	10	1	10
				By Costing P/L A/c			184
	10		194		10		194

Abnormal Gain A/c

Particulars	Kgs.	Rate	₹	Particulars	Kgs.	Rate	₹
To Normal Loss	25	2	50	By S. Y. Process A/c	25	22.40	560
To Costing P/L A/c			510				
	25		560		25		560

Costing Profit & Loss A/c

Particulars	₹	Particulars	₹
To TY Process Stock A/c	48,160	By Abnormal Gain A/c	510
To Abnormal Loss A/c	184	By Sales (1720 x 40)	68,800
To Net Profit c/d	20,966		
	69,310		69,310

Illustration : 8

Satyug Times Ltd. submits the following information in respect of its product which passes through 3 consecutive process viz Ingestion process, Idigestion process and Assimilation process for the month ended 31st January, 2014.

Particulars	Ingestion	Digestion	Assimilation
Quantitative Information (kgs)			
Basic Raw Material @ ₹40 per kg.	80,000	--	--
Normal Yield	80%	60%	70%
Output during the month	62,000	36,000	21,000
Stock of Process Output:			
31-12-2013	8,000	8,000	5,000
31-01-2014	10,000	4,000	4,000
Other Additional Informational			
Process Material	₹3,45,000	₹8,26,000	₹6,17,000
Labour Mandays	2,400	1,500	1,000
Labour Rate Per Manday	₹80	₹100	₹150
Machine Overheads	60% of Wages	50% of Process Material	₹2,34,000
Other Manufacturing Overheads	2,75,800	1,63,000	1,27,000
Value of Opening Stock Per Kgs.	₹60	₹140	₹300
Scrap Value Per Kgs.	₹10	₹15	₹20

Finished Stock of assimilation process was sold at ₹350 per kg.

Prepare the process A/c, Process Stock A/c, Normal Loss A/c and the Abnormal Gain / Loss A/c.

Ingestion Process A/c

Particulars	Kgs.	Rate	₹	Particulars	Kgs.	Rate	₹
To Input	80000	40	32,00,000	By Normal Loss	16000	10	1,60,000
To Process Material			3,45,000	By Abnormal Loss	2000	62	1,24,000
To Labour (2400 x 80)			1,92,000	By transfer to Process Stock A/c	62,000	62	38,44,000
To Machine Overheads (60% of Labour)			1,15,200				
To Manufacturing Overheads			2,75,800				
	80000		41,28,000		80,000		41,28,000

Ingestion Process Stock A/c

Particulars	Kgs.	Rate	₹	Particulars	Kgs.	Rate	₹
To Balance b/d	8000	60	4,80,000	By Transfer to Digestion Process	60,000		37,04,000
To Transfer from Ingestion Process A/c	62000	62	38,44,000	By Balance c/d	10000	62	6,62,000
	70,000		43,24,000		70,000		43,24,000

Digestion Process A/c

Particulars	Kgs.	Rate	₹	Particulars	Kgs.	Rate	₹
To Transfer from Ingestion Process Stock	60000		37,04,000	By Normal Loss	24000	15	3,60,000
To Process Material			8,26,000	By Transfer to Process Stock A/c	36,000	136	48,96,000
To Labour (1500 x 100)			1,50,000				
To Machine Overheads (50% of Process Material)			4,13,000				
			52,56,000				52,56,000

Digestion Process Stock A/c

Particulars	Kgs.	Rate	₹	Particulars	Kgs.	Rate	₹
To Balance b/d	8,000	140	11,20,000	By Transfer to Assimilation Process A/c	40,000		54,72,000
To Transfer from Digestion Process A/c	36,000	136	48,96,000	By Balance c/d	4000	136	5,44,000
	44000		60,16,000		44000		60,16,000

Assimilation Process A/c

Particulars	Kgs.	Rate	₹	Particulars	Kgs.	Rate	₹
To Transfer from Digestion Process Stock A/c	40000		54,72,000	By Normal Loss	20000	20	4,00,000
To Process Material			6,17,000	By Transfer To Process Stock A/c	21000	310	65,10,000
To Labour (1000 x 150)			1,50,000				
To Machine Overheads			2,34,000				
To Manufacturing Overheads			1,27,000				
To Abnormal Gain	1000	310	3,10,000				
	41000		69,10,000		41000		69,10,000

Assimilation Process Stock A/c

Particulars	Kgs.	Rate	₹	Particulars	Kgs.	Rate	₹
To Bal b/d	5000	300	15,00,000	By Sales	22000	350	77,00,000
To Transfer from Assimilation Process Stock A/c	21000	310	65,10,000	By Balance c/d	4000	310	12,40,000
To Costing P/L A/c			9,30,000				
	26000		89,40,000		26000		89,40,000

Normal Loss A/c

Particulars	Kgs.	Rate	₹	Particulars	Kgs.	Rate	₹
To Ingestion	16000	10	1,60,000	By Actual Sales			
To Digestion	24000	15	3,60,000	Ingestion	16000	10	1,60,000
To Assimilation	20000	20	4,00,000	Digestion	24000	15	3,60,000
				Assimilation	19000	20	3,80,000
				By Abnormal Gain			
				Assimilation	1000	20	20,000
	60,000		9,20,000		60,000		9,20,000

Abnormal Loss A/c

Particulars	Kgs.	Rate	₹	Particulars	Kgs.	Rate	₹
To Ingestion Process	2000	62	1,24,000	By Actual Sale	2000	10	20,000
				By Costing P/L A/c (Loss)			1,04,000
	2000		1,24,000		2000		1,24,000

Abnormal Gain A/c

Particulars	Kgs.	Rate	₹	Particulars	Kgs.	Rate	₹
To Normal Loss A/c	1000	20	20,000	By Assimilation Process A/c	1000	310	3,10,000
To Costing P/L A/c (Profit)			2,90,000				
	1000		3,10,000		1000		3,10,000

Costing Profit & Loss A/c

Particulars	₹	Particulars	₹
To Abnormal Loss	1,04,000	By Assimilation Process A/c	9,30,000
To Net Profit c/d	11,16,000	By Abnormal Gain	2,90,000
	12,20,000		12,20,000

$$\text{Cost Per Unit} = \frac{\text{Total Cost} - \text{Scrap Values of Normal Loss}}{\text{Input} - \text{Normal Loss Units}}$$

$$\text{Ingestion} = \frac{4128000 - 160000}{80,000 - 16,000} = \frac{39,68,000}{64,000} = 62$$

$$\text{Digestion} = \frac{52,56,000 - 3,60,000}{60,000 - 24,000} = \frac{48,96,000}{36,000} = 136$$

$$\text{Assimilation} = \frac{6600000 - 400000}{40000 - 20000} = \frac{62,00,000}{20,000} = 310$$

Quantity Reconciliation:

Particular	Ingestion	Digestion	Assimilation
Input	80,000	60,000	40,000
(-) Normal Loss	16,000	24,000	20,000
Expected Output	64,000	36,000	20,000
(-) Actual Output	62,000	36,000	21,000
Abnormal Loss / gain	2,000 (Loss)	Nil	1,000 (Gain)
Actual Output	62,000	36,000	21,000
(+) Opening Stock	8,000	8,000	5,000
(-) Closing Stock	(10,000)	4,000	4,000
Transfer to Next Process	60,000	40,000	22,000 Output Sold

* Instead of Normal Loss, Normal Yield is given. It means total input - Normal Yield = Normal Loss.

If input is 100%

∴ Ingestion Process Normal Yield is 80%

∴ Normal Loss = Input - Normal Yield
= 100 - 80

∴ Normal Loss = 20%

Input of Ingestion Process 80,000 x 20% = 16,000

Some way of Digestion & Assimilation Process.

5.6 EXERCISE

A. Objective Questions

Q.1 Multiple Choice Questions

1. The cost of units of abnormal Loss is

- A. Credited to the process A/C
- B. Debited to the process A/C
- C. Credited to the normal Loss A/C
- D. Debited to the normal Loss A/C

2. The cost of units of abnormal loss is

- A. Credited to the normal loss A/C
- B. Debited to the normal loss A/C
- C. Credited to the process A/C
- D. None of the above

3. The cost of units of abnormal gain is

- A. Debited to the process A/C
- B. Debited to profit and loss A/C
- C. Credited to the process A/C
- D. None of the above

4. Normal loss is calculated as

- A. Actual output – Normal output
- B. Normal output – Actual output
- C. Input x % of Normal loss
- D. None of the above

5. Normal output is equal to

- A. Input – normal loss
- B. Input – abnormal loss
- C. Input – abnormal gains
- D. None of the above

6. Abnormal loss is equal to

- A. Input – Actual output
- B. Actual output – Normal output
- C. Normal output – Actual output
- D. Actual output – input

7. Abnormal gain is equal to
 A. Actual output – Normal output
 B. Normal output –Actual output
 C. Actual output – Input
 D. Input –Actual output
8. Cost Per Unit is calculated as
 A. Total Cost /Normal output
 B. Normal cost/ Total cost
 C. Cost of process –sale value of normal loss / Input – Normal Loss
 D. Total cost/ Total Output
9. Allocation of joint cost deals with -----
 A. CAS-3
 B. CAS-5
 C. CAS-4
 D. CAS-2
10. Sale of residue or scrap is -----
 A. Credited to process A/C
 B. Credited to P & L A/C
 C. Credited to Abnormal Loss A/C
 D. None of the above

**(Answers :- 1. A 2.C 3.A 4. C 5. B 6. C 7. A 8.C
 9. C 10. A)**

Q.2 True and False

1. The cost of good units is increased by the abnormal gain in process costing.
2. The cost of units of abnormal loss is debited to the process A/C.
3. Invisible waste has sale value .
4. The cost of units of abnormal gain is credited to the process A/C.
5. The sale value of residue is credited to the process A/C.
6. Under contribution margin method , variable costs apportion on the basis of units produced.
7. Joints products are of unequal importance.

8. Under Net Realizable value method, the estimated profit margin deducted.
9. The proportion of joint products can be changed at the will of the management.
10. Joint products are produced from the different processes.

(Answer: True :- 1, 5, 6, 8. False :- 2, 3, 4, 7, 9, 10.)

B. Practical Problems:

- 1) Product *x* is obtained after it is processed through 3 distinct processes:-

The following information is available for the month of March 2014.

Particulars	Process A	Process B	Process C	Total
Material Consumed	10,400	8,000	4,100	22,500
Direct Labour	9,000	14,720	5,600	29,320
Production Overhead	-	-	-	29,320

2000 Units at ₹4 per unit were introduced in process A. Production overheads to be distributed as 100% on direct labour. The actual output and normal loss of the respective process are:

Particulars	Output in Units	Normal Loss on Input	Value of Scrap Per Unit
Process A	1800	10%	2.00
B	1360	20%	4.00
C	1080	25%	5.00

There is no stock or work in progress in any process. You are required to prepare process a/c.

- 2) Product 'A' is obtained after it is processed through process *x*, *y* and *z*.

The following cost information is available for the month ended 31st March, 2014.

Particulars	x	y	z
Number of Units introduced in the process	500	--	--
Rate per unit of units introduced ₹	04	--	--
Cost of Material	2,600	2,000	1,025
Direct Wages	2,250	3,680	1,400
Production Overheads	2,250	3,680	1,400
Normal Loss (% on Units Introduced of each Process)	10%	20%	25%
Value of Scrap per Unit	2/-	4/-	5/-
Output in Units	450	340	270

There is no stock in any process. You are required to prepare the Process A/c.

3) The product of a company process through of distinct processes to completion. These process or known as x , y and z . From the past experience, it is ascertained that wastage is incurred in each process as under - process x - 2%, Process y - 4%, Process z - 10%

The Wastage at each process possess scrap value. The wastage of process x and y is sold at ₹2.50 per unit, and that of process z at ₹5.00 per unit. The output of each process passes immediately to the next process and finished units are transferred from process z into stock. The following information is obtained.

Particulars	x	y	z
Material	2,70,000	2,60,000	1,20,000
Wages	4,30,000	2,40,000	1,30,000
Direct Expenses	1,37,500	1,45,000	1,80,000
Output of each process (in units)	48,750	47,000	42,000

50,000 units were put in process x at a cost of ₹10/- per unit. There is no stock of work in progress in any process. Prepare process A/c. Abnormal Loss and Gain A/c.

4) A product of a manufacturing concern passes through two process viz A and B and then to finished stock. The following figures have been taken from its books for the year ended 31st March 2013.

Particulars	Process A	Process B
Raw Material Introduced in Process (Units)	10,000	700
Cost of Raw Material introduced (per unit ₹)	125	200
Wages (₹)	2,80,000	1,00,000
Machine Expenses (₹)	20,000	10,000
Direct Expenses (₹)	10,000	10,000
Other Factory Expenses (₹)	45,000	22,500
Indirect Material (₹)	5,000	10,000
Normal Loss in Weight (% of total units introduced in each process)	5%	5%
Normal Scrap (% on total Units Introduced in each process)	10%	10%
Realizable Value of Scrap (per 10 units)	(₹) 800	(₹) 2,000
Output (Units)	8,300	7,800

Prepare Process A/c, Abnormal Loss and Abnormal Gain A/c.

5) ABC and Co. manufactures a chemical which passes through three processes. The following particulars garnered for the month of January 2014.

Particulars	Process I	Process II	Process III
Material (Litre)	4000	208	168
Material Cost	₹38,400	₹18,800	₹6,000
Wages	₹7,680	₹7,600	₹2,200
Normal Loss (% of input)	4%	5%	5%
Scrap Sale Value	--	₹3 per Ltr.	--
Output Transferred to Next Process	50%	40%	--
Output Transferred to Warehouse	50%	60%	100%

Overheads are charged @ 50% of Direct Wages. You are required to prepare Process A/c.

