# 1

# INTRODUCTION TO COST ACCOUNTING

**Unit structure**



## 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 of 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 Maintainance 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.

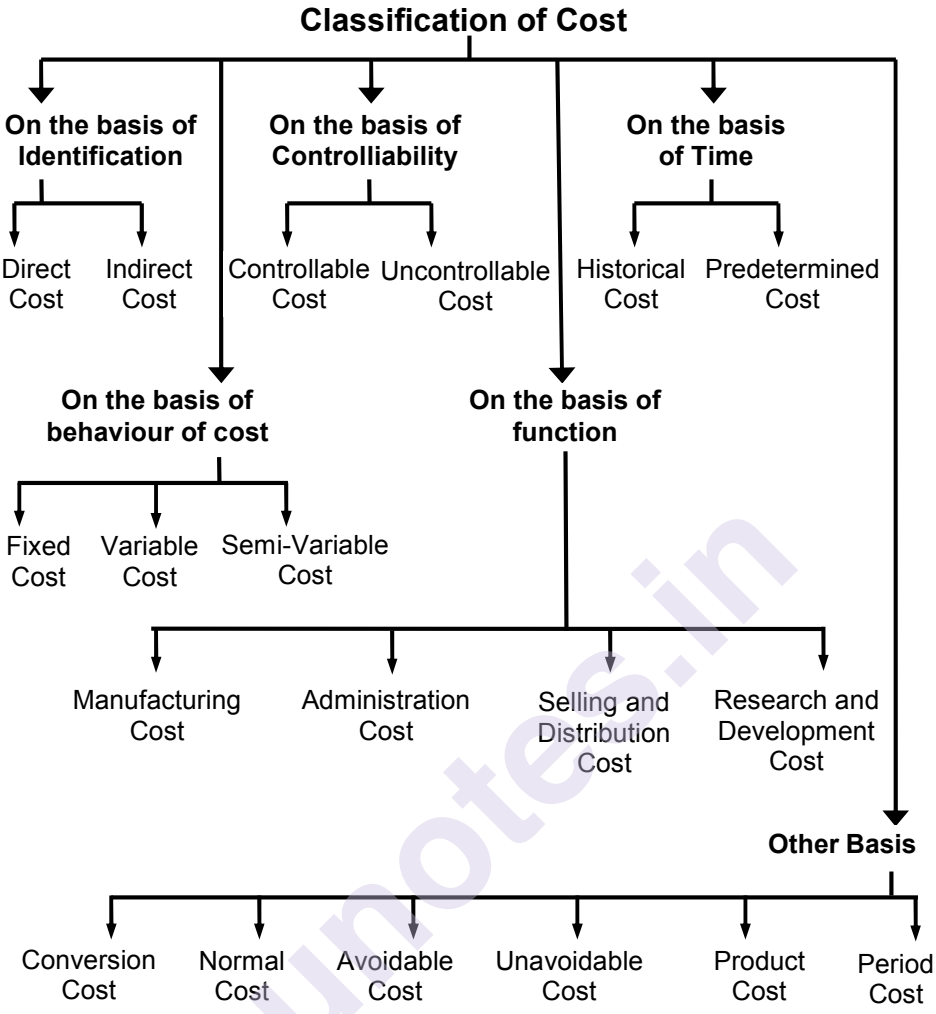
Few examples of cost unit are given below.

| 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.

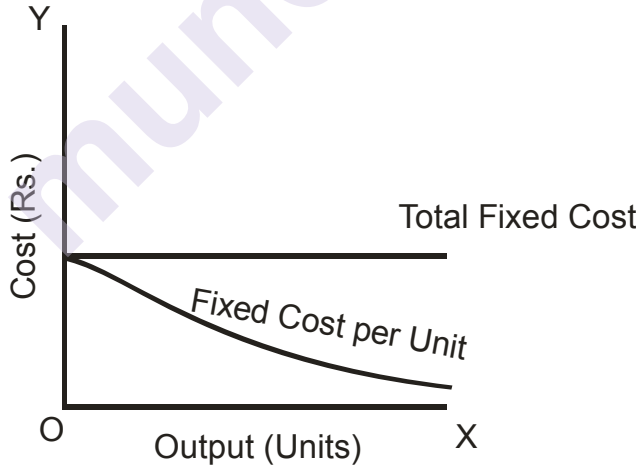
## II On the basis of behaviour of Cost

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 very 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



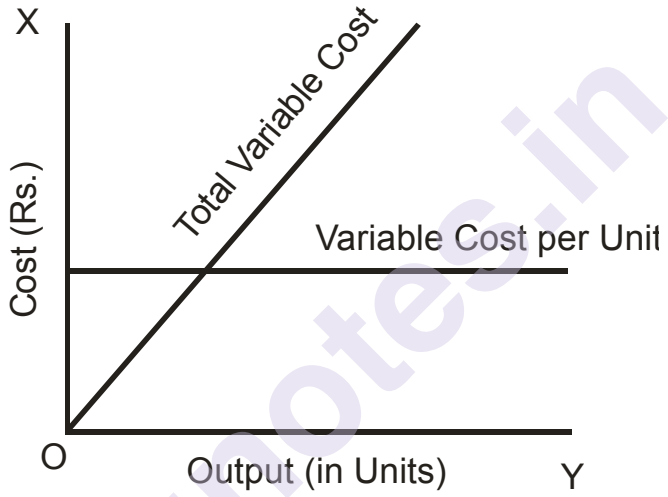

**Behaviour of Fixed Cost**

2) **Variable Cost :** It is that cost which directly very 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 very 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 :**

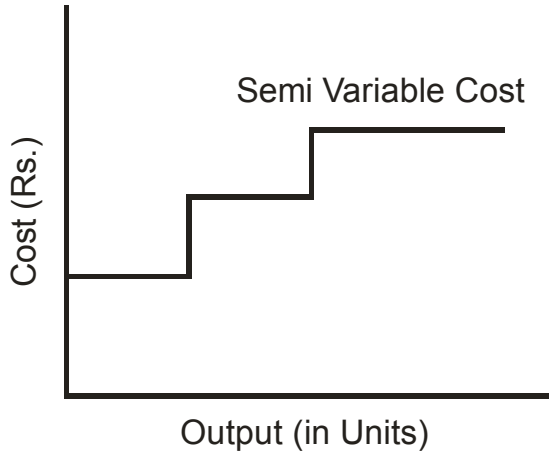
a. Total cost changes in direct proportion to the change in total output.
b. Cost per unit remains content.
c. It is quite divisible.
d. It is identifiable with the individual cost unit.
e. Such costs are controlled by functional manager.




**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, maintainance 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 Stall, 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 in 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**

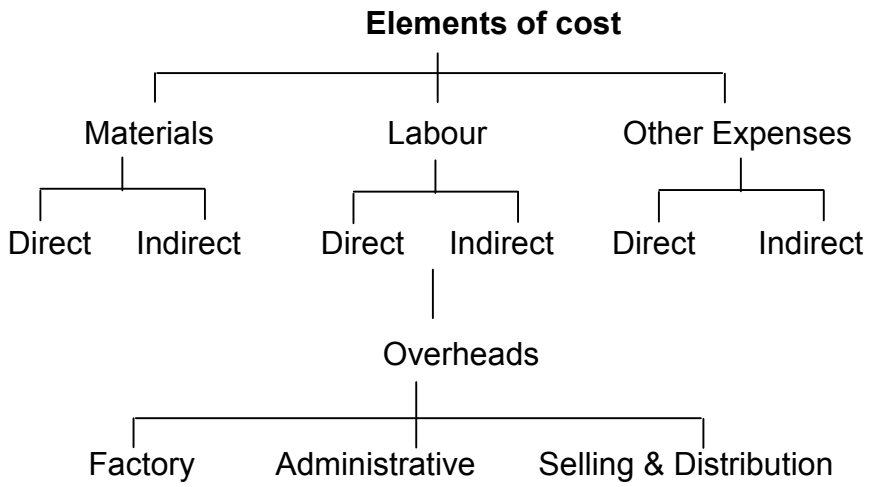
- Draw the chart showing Classification of Cost.
- Define the following terms:
    1. Costing
    2. Cost Accounting
    3. Impersonal cost center
    4. Service Cost center
    5. Direct Cost
    6. Uncontrollable cost
    7. Predetermined cost
- Give Examples:
    1. Fixed cost
    2. Variable cost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

# 2

# CLASSIFICATION OF COSTS AND COST SHEET

**Unit Structure :**



## 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.

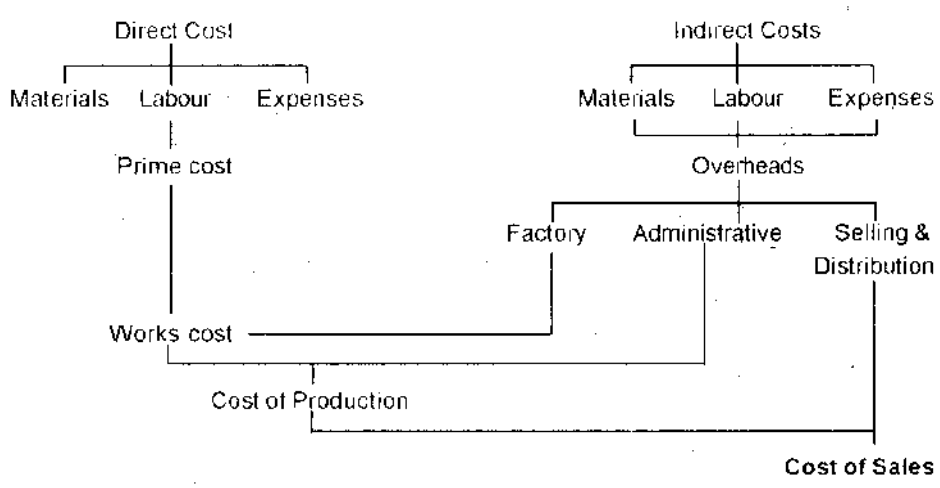
c) **Stock of Finished goods :-** Finished goods covers the products on which factory work has been completed. It is the cost of completed production. The opening and closing values of finished goods are to be adjusted with the total cost of production in order to arrive at cost of sales.

### 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 | 80,000 | | |
| Add: Carriage Inward | 2,000 | | |
| | 1,06,000 | | |
| Less: Closing stock of materials | 20,000 | | |
| Cost of Materials consumed | | 86,000 | 86.00 |
| Direct Wages | | 35,000 | 35.00 |
| (i) PRIME COST | | 121000 | 121.00 |
| **Factory overheads :** | | | |
| Factory Wages | 2,000 | | |
| Factory expenses | 4,000 | | |
| Factory Rent & Rates | 2,500 | | |
| Depreciation | 2,500 | | |
| | | 11,000 | 11.00 |
| (II) WORKS COST | | 1,32,000 | 132.00 |
| **Administrative Overheads :** | | | |
| Office Salaries | 15,000 | | |
| Office Expenses | 12,000 | 27,000 | 27.00 |
| (iii) COST OF PRODUCTION | | 1,59,000 | 159.00 |
| **Selling & Distribution Overheads :** | | | |
| Carriage Outward | 1,000 | | |
| Bad Debts | 1,500 | | |
| | | 2,500 | 2.50 |
| **TOTAL COST** | | 1,61,500 | 161.50 |
| Add: Opening Stock of finished goods | | 16,000 | |
| | | 1,77,500 | |
| Less: Closing Stock of finished goods | | 15,000 | |
| (iv) Cost of Sales | | 1,62,500 | 162.50 |

| | | |
|---|---|---|
| (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 1000 Radios | | 2010 1200 Radios | |
|---|---|---|---|---|
| | 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 @Rs.50,000 p.a. | 12500 | — | — |
| For 9 months @Rs.70,000 p.a. | – | 525000 | 65000 |
| Total Cost | 125000 | 525000 | 650000 |
| Profit | – | - | 100000 |
| 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%

$$= = \frac{4000}{2000} \; x \; 100 \; = 20\%$$

**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 & W Rs. | Colour 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 paisa 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-

a) Fixed expenses will go up by 10 per cent.
b) Direct labour will increase by 20 percent.
c) Direct material cost will increase by 5 percent.
d) 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.

# 3

# RECONCILATION OF COST AND FINANCIAL ACCOUNTS

**Unit Structure :**



## 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 | |
| | xxx | |
| 3. Opening Stock over valued in Financial books | xxx | |
| | 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** | xxx | |
| 1. Income credited only in Financial Books | xxx | |
| 2. Closing stock over valued in Financial Books | xxx | xxx |
| | | xxx |
| 3. Opening Stock under valued in Financial books | | |
| 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 | |
| | xxx | |
| 3. Opening Stock under valued in Financial Books | xxx | |
| | xxx | |
| 4. Short depreciation charged in Financial Books | xxx | xxx |
| | | xxx |
| 5. Expenses over recovered in Cost Books | | |
| 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 | |
| 3. Opening Stock over valued in Financial Books | xxx | xxx |
| 4. Excess depreciation charged in Financial Books | | xxx |
| 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 |
| Deprecation 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 :

a) Cost accounts valued closing stock at Rs. 4280
b) The work expenses in the cost accounts were taken at 100% of direct wages.
c) Selling & administration expenses were charged in the cost accounts at 10% of sales and 0.10 per unit respectively.
d) 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 |
| | --- | --- |
| | | 22770 |
| Less 1. Difference in valuation of closing | 200 | |
| 2. Under absorption of Administrative Exp. | 340 | |
| 3. Under absorption of Works Exps. | 1630 | |
| 4. Depreciation under changed | 300 | 2470 |
| Profit as per Financial Accounts | --- | --- |
| | | 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 Cr.

| | Rs | | Rs. |
|---|---|---|---|
| To Expenses not debited to Cost accounts: | | By Profit as per cost account | 19636 |
| Fines | 200 | | |
| Discount | 100 | By Income not credited in | 400 |
| Loss on sale of Care | 1950 | Cost accounts: | 150 |
| Income Tax | 8000 | Dividend Received | |
| Tr. to Reserves | 1000 | Interest on Bank FD | |
| 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 | |
| To Wages | 1,50,000 | | |
| To Gross Profit c/d | 3,02,500 | at Rs.50 each) | 12,500 |
| | 7,30,000 | | 7,30,000 |
| 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 | | |
| | 3,12,750 | | 3,12,750 |

**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 |
| PRIME COST | 410000 | 41 |
| Factory Overheads (60% of Labour cost) | 90000 | 9 |
| WORKS COST | 500000 | 50 |
| 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 | |
| | 622500 | |

| | | |
|---|---|---|
| Less : Closing stock of finished goods (250 units) | 15000 | ---------- |
| | 607500 | 6 |
| Selling Expenses | 61500 | ---------- |
| | 669000 | 66 4 |
| COST OF SALES | 48500 | ---------- |
| PROFIT | 717500 | 70 |
| SALES | | |

**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 : Closing Stock | 2500 | |
| 7. Purely financial expenses: Bad Debts | 4000 | |
| 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 over heads 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 an 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.4590, 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 |
| Administration expenses | | 9,845 | Gross profit b/d | 48,329 |
| | | | Sundry Income | 316 |
| Selling expenses | | 22,176 | | |
| Net Profit | | 16,624 | | |
| | | 48,645 | | 48,645 |

**The costing record shows:**

a. a stock ledger closing balance of Rs.78,197
b. a direct wages absorption account of Rs.24,867
c. a factory overhead absorption account of Rs.19,714
d. administration expenses calculated at 3% of the selling price
e. selling expenses are five percent on selling price
f. 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 | | | |
| | 180000.00 | | | |
| Less: Closing stock | 80000.00 | | | |
| | | 100000.00 | | |
| To Direct wages | | 20000.00 | | |
| To Factory Wages | | 15000.00 | | |
| To Gross Profit C/f. | | 40000.00 | | |
| 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 | | |
| | | 40000.00 | | 40000.00 |

Costing records show the following:-

a. Stock Ledger closing balance Rs.89, 000
b. Direct labour Rs.23, 000
c. Factory overheads Rs.13, 000
d. 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 | |
| " Wages | 1,03,000 | (units at Rs. 16 | |
| " Works Expenses | 1,16,000 | each) | 8,00,000 |
| " Administration Expenses | 55,000 | By Closing stock | 43,000 |
| | | By Interest on | |
| " Selling Expenses | 68,000 | Investments | 3,000 |
| " Depreciation | 12,000 | By Profit on Sale of | |
| " Net Profit | 2,63,000 | building | 24,000 |
| | 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.



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# 4

# CONTRACT COSTING

**Unit Structure :**



## 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 treatement 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 find 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 transfer to national profit.

Then me national 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:-

a. 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).

b. If the contract is completed between 25% to 50% - Then the profit & loss is calculated as -

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

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

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

d. 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,

Contract Price = 10,00,000 = 100%

Work Certified 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) | xx | By Profit & Loss A/c (Loss) | xx |
| Cost (Capital Method) | xx | | |
| To Special Plant Depreciation | xx | | |
| (Direct Method) OR | xx | | |
| Cost (Capital Method) | | | |
| 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 | xxx | 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<br>Cost of Plant (Capital Method) | xx | | |
| To Special Plant Depreciation | xx | | |
| (Direct Method) OR<br>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 | 31,000 | | |
| 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 | | |
| | | 83,300 | | 83,300 |
| To Profit & Loss A/c | | Nil | By Notional Profit b/d | 1,800 |
| To Work in Progress (Reserve) | | 1,800 | | |
| | | 1,800 | | 1,800 |

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

Contract Price - 5,00,000 = 100%

Work Certified 80,000 = ?

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

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 |
| Scrop Sold | 30,000 |
| Work Certified | 50,00,000 |

The following further information was available:-

a) Outstanding wages and direct expenses were ₹10,000 and ₹20,000 respectively on 31-03-2014.

b) Material at site at the end of the year is Valued at ₹1,20,000.

c) Value of work uncertified ₹2,00,000 on 31.03.2014.

d) Included in wages is the salary paid to supervisor @ ₹30,000 p.m. who had devoted half of the time on this contract.

e) 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 Scrop 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 |
| | 19,10,000 |
| ( - ) 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 | 17,75,000 |

ii) Direct Expenses

| | |
|---|---|
| Direct Expenses | 3,00,000 |
| ( + ) Outstanding | 20,000 |
| Total Direct Expenses | 3,20,000 |

iii) Depreciation on Plant

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

$$\therefore \text{Depreciation} = \frac{\text{Original Cost - Scrop Value}}{\text{Estimated Life of Plant}}$$

$$= \frac{6,00,000 - 50,000}{5} = 1,20,000 \text{ p.a.}$$

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

iv) Notional Profit = 4,65,000

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

Contract Price = 60,00,000 = 100%

Work Certified = 50,00,000

$$\text{Contract Completed} = 50,00,000 \times \frac{100}{60,00,000}$$

= 83.33%

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

(50 - 90%)

P & L A/c = $\frac{2}{3}\times$ Notional Profit

= $\frac{2}{3}\times$ 4,65,000

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 | 9,45,000 |
| (Being 90% of the work certified) | |
| Material Destroyed by Five | 5,000 |
| Supervisors Salary | 60,000 |
| Plant and Machinery at Cost | 2,00,000 |

(Date or 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)

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

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

Depreciation 18,000 p.a.

$\therefore$ 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.

Contract Price = 12,00,000 = 100%

Work Certified = 10,50,000 = ?

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

Contract Completed = 87.5%

Formula used 50 - 90%)

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

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

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)

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

Work Certified = ? 100%

$\therefore$ Work Certified can be calculated as

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

= 10,50,000

$\therefore$ 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 Administrative 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:-

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

$$= \frac{60,00,000 - 3,00,000}{19\ \text{Months}} = \frac{57,00,000}{19}$$

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.

∴ 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

∴ 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.

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

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

Profit & Loss A/c = 35,00,000

**Illustration : 5**

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

a) The project commenced on 1st May 2013 and it was estimated to be completed by 31st January 2015.

b) The contract price was fixed at ₹2,70,00,000.

c) 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 | By Work in Progress | |
| 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

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

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 |
|---|---|---|
| Date of Commencement | 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

$\therefore$ Cash Received = 4,80,000 = 80%

$\therefore$ Work Certified = ? = 100

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

$\therefore$ Work Certified = 6,00,000

ii) Depreciation on Plant.

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

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

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.

Contract Price = 10,00,000 = 100%
Work Certified = 6,00,000 = ?

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

$\therefore$ Contract Completed = 60%.

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

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

$$= \frac{2}{3} \times 72,000 \times \frac{4,80,000}{6,00,000}$$

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.

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

$\therefore$ Depreciation = 35,000

ii) Calculation of work certified :-

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

$\therefore$ Cash Received = 2,40,000 = 80%

Work Certified = ? = 100

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

$\therefore$ Work Certified = 3,00,000

Many Years $\rightarrow$ 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 | Period 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 | By Work in Progress | |
| 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)

Depreciation = 3,00,000 x 20% p.a.

= 60,000 p.a.

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

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.

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

Work Certified 3,00,000 = ?

$\therefore$ % 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 Work in Progress b/d | | 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 1st Year | 45,000 |
| WDV of Plant | 2,55,000 |

∴ Depreciation on 1st Plant

2,55,000 x 20% - 51,000

Depreciation on 2nd Plant

1,50,000 x 20% - 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 |
| Work in Progress | | 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 |
| Work in Progress | | By Work in Progress b/d | |
| 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 National Profit b/d | 6,100 | | |
| | 32600 | | 32,600 |
| To Profit & Loss A/c | 4,118 | By Notional Profit b/d | 6,100 |
| To Work in Progress (Reserve) | 1,982 | | |
| | 6,100 | | 6,100 |

**Working Note:-**

i) Depreciation on Plant at Roha Contract

| | |
|---|---|
| Opening Balance of Plant | 3,100 |
| ( - ) Closing Balance of Plant | 2,000 |
| Depreciation on Plant | 1,100 |

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

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

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

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 Work in Progress c/d | |
| 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 | 600 |

**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.

1. Retention money is
   a) Payment received – Work certified
   b) Work certified – Cash received
   c) Work certified – work uncertified
   d) 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 * Notional profit
   C. 2/3 * 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 or 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 contractce 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.

# 5

# PROCESS COSTING

**Unit Structure :**



## 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 row 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.

For e.g. if input is 1000 units, assumed that normal or weight Loss is 5% before production i.e. 50. It means expected output is 950 units, but after production actual output is 920 units then these 30 unit (950-920) are called as abnormal loss. In short, you expected only 50 units of normal loss but actual wastage is 80 so it is over and above expected loss as abnormal loss.

### 5.3.2 Abnormal Gains:-

In some process, there is a normal Loss but the actual productions are more than expectation. In short, output is over and above expectation, is called as abnormal gain. For eg - If input is 1000 units, assumed that normal loss or weight loss is 5% before production i.e. 50 unit. It means, expected output is 950 units but production actual output is 970 units then these 20 units (970 - 950) are called as abnormal gain. In short, you expected only 50 units of normal Loss but actual wastage is only 30 units, so these 20 units are over and above expectation known as abnormal gain.

### 5.3.3 Cost Per Unit:-

Under each process always find out cost per unit. In short find out net cost of each process. Firstly take the total of Debit side Minus Credit Side of Process A/c it is calculated by following

**Formula**

$$\text{Cost Per Units} = \frac{\text{Total Cost (Dr. Side)} - \text{Scrap Value of Normal Loss (Cr. Side)}}{\text{Input (Units)} - \text{Normal Loss (Units)}}$$

## 5.4 FORMAT OF PROCESS A/C

**Process I A/c**

| Particulars | Units | Rate | ₹ | Particulars | Units | Rate | ₹ |
|---|---|---|---|---|---|---|---|
| To Input | | | | By Normal Loss | | | |
| To Direct Material | | | | By Transfer to Process II A/c | | | |
| To Labour | | | | | | | |
| To Overheads | | | | | | | |
| To Expenses | | | | | | | |
| | | | | | | | |

**Process II A/c (Abnormal Loss)**

| Particulars | Units | Rate | ₹ | Particulars | Units | Rate | ₹ |
|---|---|---|---|---|---|---|---|
| To Transfer from Process I | | | | By Normal Loss | | | |
| To Material | | | | By Abnormal Loss A/c | | | |
| To Labour | | | | By Transfer to Process III A/c | | | |
| To Overheads | | | | | | | |
| to Expenses | | | | | | | |
| | | | | | | | |

**Process III A/c (Abnormal Gain)**

| Particulars | Units | Rate | ₹ | Particulars | Units | Rate | ₹ |
|---|---|---|---|---|---|---|---|
| To Transfer from Process II | | | | By Normal Loss | | | |
| To Material | | | | By Transfer to Finished Stock A/c | | | |
| To Labour | | | | | | | |
| To Overheads | | | | | | | |
| To Expenses | | | | | | | |
| To Abnormal Gain | | | | | | | |
| | | | | | | | |

**Normal Loss A/c**

| Particulars | Units | Rate | ₹ | Particulars | Units | Rate | ₹ |
|---|---|---|---|---|---|---|---|
| To Process I | | | | By Actual Sale | | | |
| 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 |

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

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

## 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 |

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

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

**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% |
| Scrop 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 |

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

$$= \frac{6,44,000 - 4,000}{20,000 - 4,000} = \frac{6,40,000}{16,000} = 40$$

**Process II A/c**

| Particulars | Units | Rate | ₹ | Particulars | Units | Rate | ₹ |
|---|---|---|---|---|---|---|---|
| To Transfer From Process I | 18,000 | 40 | 7,20,000 | By Normal Loss | 2,700 | 2 | 5,400 |
| To Material | | | 1,08,259 | By Transfer to Process III A/c | 16,000 | 60 | 9,60,000 |
| 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 and 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 (100% of Wages) | | | 2,000 | | | | |
| | 1,000 | | 11,500 | | 1,000 | | 11,500 |

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

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

## 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 |

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

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

## 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 | 22040 |
| 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 | 2,88`0 | 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 |

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

$$\text{General Assembling} = \frac{8,16,000 - \text{Nil}}{5,000 - 200}$$

$$= \frac{8,16,000}{4,800} = 170$$

$$\text{Lower Assembly} = \frac{9,57,600 - \text{Nil}}{4,800 - 240}$$

$$= \frac{9,57,600}{4,560} = 210$$

$$\text{Higher Assembly} = \frac{9,83,920 - \text{Nil}}{5,400 - 540}$$

$$= \frac{9,83,920}{4,860} = 202.45$$

**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 | - | 50 | |
| Expected Output | - | 950 | Actual Output |
| (+) Opening Stock | - | 100 | |
| | | 1,050 | |
| ( - ) Closing Stock | - | 150 | |
| | | 900 | - 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 1st March 2014 | 200 | 300 | 100 |
| - On 31st 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 |

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

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

## 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 |

S.Y. Process = $\frac{42760 - 200}{2000 - 100}$

= $\frac{42560}{1900} = 22.40$

## 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 |

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

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

**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 |

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

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

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

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

**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 $x, y \text{ and } z$ .

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 Scrop 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 $x, y \text{ and } z$. 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 $x \text{ and } y$ 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 | 5% | 5% |
| (% of total units introduced in each process) | | |
| 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.