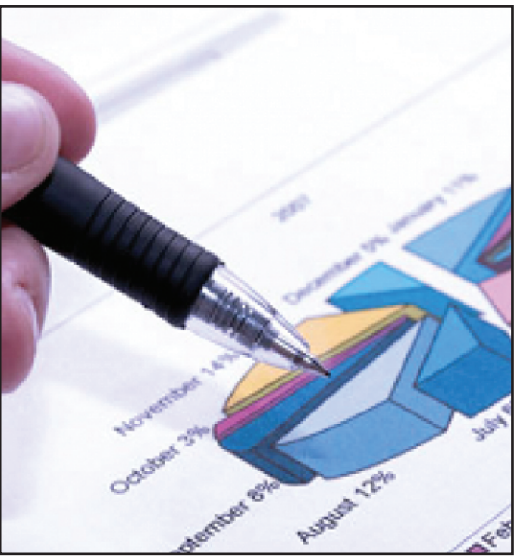
# Cost Accounting

## Student Handbook



## CLASS-XII

**CENTRAL BOARD OF SECONDARY EDUCATION**

Shiksha Kendra, 2, Community Centre, Preet Vihar, Delhi-110301


BUILDING SKILLS•BUILDING FUTURE•

# Cost Accounting

## CLASS - XII

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**Cost Accounting**

**Student Handbook, Class-XII**

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# भारत का संविधान

## उद्देशिका

हम, भारत के लोग, भारत को एक सम्पूर्ण [1]प्रभुत्व-संपन्न समाजवादी पंथनिरपेक्ष लोकतंत्रात्मक गणराज्य बनाने के लिए, तथा उसके समस्त नागरिकों को:

सामाजिक, आर्थिक और राजनैतिक न्याय,
विचार, अभिव्यक्ति, विश्वास, धर्म
और उपासना की स्वतंत्रता,
प्रतिष्ठा और अवसर की समता
प्राप्त कराने के लिए
तथा उन सब में व्यक्ति की गरिमा
[2]और राष्ट्र की एकता और अखंडता
सुनिश्चित करने वाली बंधुता बढ़ाने के लिए

दृढ़संकल्प होकर अपनी इस संविधान सभा में आज तारीख 26 नवम्बर, 1949 ई॰ को एतद्द्वारा इस संविधान को अंगीकृत, अधिनियमित और आत्मार्पित करते हैं।

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1. संविधान ( बयालीसवां संशोधन ) अधिनियम, 1976 की धारा 2 द्वारा ( 3.1.1977 ) से "प्रभुत्व-संपन्न लोकतंत्रात्मक गणराज्य" के स्थान पर प्रतिस्थापित।
2. संविधान ( बयालीसवां संशोधन ) अधिनियम, 1976 की धारा 2 द्वारा ( 3.1.1977 ) से "राष्ट्र की एकता" के स्थान पर प्रतिस्थापित।

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## भाग 4 क

# मूल कर्त्तव्य

**51 क. मूल कर्त्तव्य** – भारत के प्रत्येक नागरिक का यह कर्त्तव्य होगा कि वह –

(क) संविधान का पालन करे और उसके आदर्शों, संस्थाओं, राष्ट्रध्वज और राष्ट्रगान का आदर करे;

(ख) स्वतंत्रता के लिए हमारे राष्ट्रीय आंदोलन को प्रेरित करने वाले उच्च आदर्शों को हृदय में संजोए रखे और उनका पालन करे;

(ग) भारत की प्रभुता, एकता और अखंडता की रक्षा करे और उसे अक्षुण्ण रखे;

(घ) देश की रक्षा करे और आह्वान किए जाने पर राष्ट्र की सेवा करे;

(ङ) भारत के सभी लोगों में समरसता और समान भ्रातृत्व की भावना का निर्माण करे जो धर्म, भाषा और प्रदेश या वर्ग पर आधारित सभी भेदभाव से परे हों, ऐसी प्रथाओं का त्याग करे जो स्त्रियों के सम्मान के विरुद्ध हैं;

(च) हमारी सामासिक संस्कृति की गौरवशाली परंपरा का महत्त्व समझे और उसका परिरक्षण करे;

(छ) प्राकृतिक पर्यावरण की जिसके अंतर्गत वन, झील, नदी, और वन्य जीव हैं, रक्षा करे और उसका संवर्धन करे तथा प्राणी मात्र के प्रति दयाभाव रखे;

(ज) वैज्ञानिक दृष्टिकोण, मानववाद और ज्ञानार्जन तथा सुधार की भावना का विकास करे;

(झ) सार्वजनिक संपत्ति को सुरक्षित रखे और हिंसा से दूर रहे;

(ञ) व्यक्तिगत और सामूहिक गतिविधियों के सभी क्षेत्रों में उत्कर्ष की ओर बढ़ने का सतत प्रयास करे जिससे राष्ट्र निरंतर बढ़ते हुए प्रयत्न और उपलब्धि की नई उंचाइयों को छू ले;

[1](ट) यदि माता-पिता या संरक्षक है, छह वर्ष से चौदह वर्ष तक की आयु वाले अपने, यथास्थिति, बालक या प्रतिपाल्य के लिये शिक्षा के अवसर प्रदान करे।

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1. संविधान ( छयासीवां संशोधन ) अधिनियम, 2002 की धारा 4 द्वारा प्रतिस्थापित।

# THE CONSTITUTION OF INDIA

## PREAMBLE

**WE, THE PEOPLE OF INDIA,** having solemnly resolved to constitute India into a [1]**SOVEREIGN SOCIALIST SECULAR DEMOCRATIC REPUBLIC** and to secure to all its citizens :

**JUSTICE,** social, economic and political;

**LIBERTY** of thought, expression, belief, faith and worship;

**EQUALITY** of status and of opportunity; and to promote among them all

**FRATERNITY** assuring the dignity of the individual and the [2]unity and integrity of the Nation;

**IN OUR CONSTITUENT ASSEMBLY** this twenty-sixth day of November, 1949, do **HEREBY ADOPT, ENACT AND GIVE TO OURSELVES THIS CONSTITUTION.**

1. Subs, by the Constitution (Forty-Second Amendment) Act. 1976, sec. 2, for "Sovereign Democratic Republic" (w.e.f. 3.1.1977)
2. Subs, by the Constitution (Forty-Second Amendment) Act. 1976, sec. 2, for "unity of the Nation" (w.e.f. 3.1.1977)

# THE CONSTITUTION OF INDIA

## Chapter IV A

## FUNDAMENTAL DUTIES

### ARTICLE 51A

**Fundamental Duties -**It shall be the duty of every citizen of India-

(a) to abide by the Constitution and respect its ideals and institutions, the National Flag and the National Anthem;

(b) to cherish and follow the noble ideals which inspired our national struggle for freedom;

(c) to uphold and protect the sovereignty, unity and integrity of India;

(d) to defend the country and render national service when called upon to do so;

(e) to promote harmony and the spirit of common brotherhood amongst all the people of India transcending religious, linguistic and regional or sectional diversities; to renounce practices derogatory to the dignity of women;

(f) to value and preserve the rich heritage of our composite culture;

(g) to protect and improve the natural environment including forests, lakes, rivers, wild life and to have compassion for living creatures;

(h) to develop the scientific temper, humanism and the spirit of inquiry and reform;

(i) to safeguard public property and to abjure violence;

(j) to strive towards excellence in all spheres of individual and collective activity so that the nation constantly rises to higher levels of endeavour and achievement;

[1](k) to provide opportunities for education to his/her child or, as the case may be, ward between age of 6 and 14 years.

1. Subs. by the Constitution (Eighty - Sixth Amendment) Act, 2002

# Preface

The continuous and efficient functioning of an organization requires utmost care and immense responsibility at various levels. The knowledge of the logistics of every department, including the cost of basic items of stationery like paper clips to nitty-gritties of the biggest deals are a pre-requisite at the managerial level for the success of any organisation. In addition, the determination of the cost per unit of the product and the price at which it should be offered to the customers is of vital importance for the sustenance and growth of any organization.

With the increasing competition and the entry of new ideas in the market on a frequent basis, the organizations are compelled to give in to cost reduction besides keeping prices at the minimum so as to retain the customers. The ultimate objective is to earn adequate profit and eliminate avoidable costs. Cost accounting plays an important role in facilitating the analysis of interplay of cost, selling price and profit.

Cost accounting uses different costing methods across various industries. For example, construction companies which work on the basis of contract use contract costing, pharmaceutical companies which produce medicines in batches make use of batch costing, transport companies and other service organizations use service costing and companies requiring various interlinked processes utilize process costing.

Realizing the enormous demand for the skilled manpower in the country, CBSE is constantly embracing effective measures to provide accessible training and skills development to the youth across the country. To persistently stimulate the enrichment of competency based skills development CBSE has initiated various Skill Competency based Vocational Courses at Senior Secondary Level aimed to educate, enable them to warrant their future employability. The current text on Cost Accounting for Class XII has been prepared keeping in view the importance of knowledge of application of costing methods and techniques to different industries thus, making the students readily acceptable to different sectors of the economy with comparatively more ease then before. The text has been written in a simple language and reader friendly manner. The Convener and his team deserves appreciation for their contribution.

Constructive and helpful suggestions from readers for the improvement of the book are welcome.

**Chairman, CBSE**

# Acknowledgement


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- Shri. Y.S.K. Seshu Kumar, Chairman, CBSE
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# Contents

## COURSE CONTENTS FOR CLASS XII
## PAPER - I: COST ACCOUNTING - II (781)
## (THEORY - 60, PRACTICAL - 40)

Theory: 60 Marks

| | | |
|---|---|---|
| 1. | Single or Output Costing | 10 |
| 2. | Job Costing and Batch Costing | 10 |
| 3. | Contract Costing | 10 |
| 4. | Process Costing | 10 |
| 5. | Operating Costing or Service Costing | 10 |
| 6. | Reconciliation of Cost and Financial Accounts | 10 |

**1. Single or Output Costing** 10

- Components of Cost for Output Costing
- Cost Sheet
- Production Account
- Treatment of Stock and Scrap

**2. Job and Batch Costing** 10

- Job Costing
- Objectives
- Procedure
- Batch Costing
- Nature and Use of Batch Costing
- Determination of Economic Batch Quantity

**3. Contract Costing** 10

- Specific aspects of Contract Costing
- Profit on Incomplete Contracts
- Profit on Completed Contracts

**4. Process Costing** 10

- General Principles
- Process Losses and Wastage
- By-Products and Joint-Products

## CLASS XII
## PAPER - II: PRACTICAL COST ACCOUNTING - I (781)

Practical - 40
(30 marks for report and 10 marks for viva-voice)

I. Prepare a Project Report on Operating Costing or Service Costing of any organization viz., transport, hotel, canteen or any other service organization

II. Visit a Manufacturing Organization to report based on actual data

- Treatment of Process Losses
- Reconciliation of Costing and Financial Profit

# UNIT - 1

## SINGLE OR OUTPUT COSTING

| Unit Code-1 | UNIT TITLE: SINGLE OR OUTPUT COSTING | | | |
|---|---|---|---|---|
| **Location:** Class Room | **Session-1: Basics of Single or Output Costing** | | | |
| | **Learning Outcome** | **Knowledge Evaluation** | **Performance Evaluation** | **Teaching & Training Method** |
| | 1. Concept of Single or Output Costing.<br><br>2. Applicability of Single or Output Costing. | 1. Describe the importance of output costing.<br><br>2. What are different terminologies for output costing.<br><br>3. Which industries use output costing. | 1. Identify various industries using output costing.<br><br>2. Specify various other names for output costing. | **Interactive Lecture:** Discussing the concept and use of output costing.<br><br>**Activity:** Visit any one Industrial unit using output costing to understand its applicability. |
| | **Session-2: Components of Cost and Treatment for Stock & Scrap** | | | |
| | 1. Components of Cost.<br><br>2. Treatment for Raw Material, Work in Progress & Finished Goods.<br><br>3. Treatment for Scrap | 1. Describe the prime cost and factory cost.<br><br>2. Explain the meaning of office cost and total cost.<br><br>3. Explain the treatment for Scrap<br><br>4. Describe the treatment for raw material, WIP & finished goods. | 1. Identify the various cost components.<br><br>2. Apply the procedure for treating raw material & WIP.<br><br>3. Identify the process to adjust scrap.<br><br>4. List out the procedure for treating finished goods. | **Interactive Lecture:** Acquaint with the cost components and treatment for stock and scrap.<br><br>**Activity:** Visit the sugar manufacturing firm and learn about the various cost elements. |

| | | | | |
|---|---|---|---|---|
| **Session-3: Cost Sheet Approach for Output Costing** | | | | |
| | 1. Meaning of Cost Sheet.<br><br>2. Types of Cost Sheet.<br><br>3. Preparation of Cost Sheet. | 1. Explain the importance of cost sheet.<br><br>2. Enumerate various kinds of cost sheet.<br><br>3. How to prepare cost sheet. | 1. Identify the various steps in the preparation of cost sheet.<br><br>2. Differentiate between historical & estimated cost. | **Interactive Lecture:** Introduction to cost sheet and its preparation.<br><br>**Activity:** Prepare a cost sheet for any single output manufacturing firm. |
| **Session-4: Production Account Approach for Output Costing** | | | | |
| | 1. Concept of Production Account.<br><br>2. Preparation of Production Account. | 1. Explain the production account.<br><br>2. Describe the preparation for production statement. | 1. Identify the process for preparing production account.<br><br>2. List out the components influencing production account. | **Interactive Lecture:** Discussion on production account and its preparation.<br><br>**Activity:** Prepare the production account for any one of the manufacturing firm. |

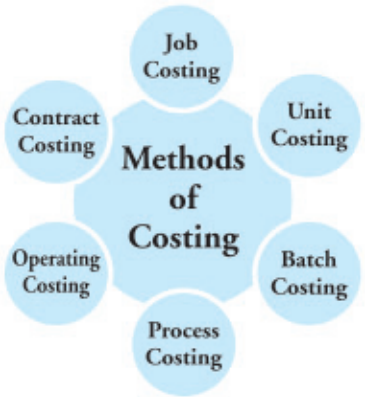
## Learning Objectives

After reading this unit, students will be able to:

- understand the concept and applicability of output costing
- identify the components of cost
- understand the treatment for stock and scrap
- explain the meaning and types of cost sheet
- learn the preparation of production account
- explain the meaning of certain keywords

## Introduction

Cost in any organization plays an important role in determining its profitability. Cost ascertainment is essential for cost control and cost management. Cost ascertainment is the determination of cost for a unit, product, process or centre based on actual data. There are various methods of costing like job costing, unit costing, batch costing, process costing, operating costing and contract costing which are helpful in as certaining the cost of a job, product, batch, process, service and contract respectively. The following chapter will emphasis on one of the method of costing for a unit or product which is called as Single, Unit or Output Costing.




## Session-1 : Basics of Single or Output Costing

### Meaning of Single or Output Costing

In output costing method, the cost per unit of output or production is ascertained. The cost per unit is derived by dividing the total cost with the total quantity produced. This type of costing is applied where the output is in identical quantitative units and manufacturing process is continuous. In this method, the various cost elements like prime cost, work/factory cost, office cost and cost of sales are determined so as to arrive at the total cost of production. There are two approaches to output costing method, i.e. cost sheet and production account. A statement of cost or cost sheet describes various components of cost at various stages. Another alternative to present the cost elements in vertical form account is the production statement or account. Both cost sheet and production account presents the same information with one major distinction. The production account shows sales and profit or loss figures along with the cost of production. The output costing method is useful in ascertaining the total cost and per unit cost of production that can be compared with the past years figures, in the same cost sheet, by the management for decision making. Moreover, it helps the management in deciding the final selling price for the product.

### Industries Using Single or Output Costing

Output costing is widely used by the manufacturing units producing a single product or identical products on mass basis with the consistent manufacturing processes. Such concerns also have cost units that are physical and natural. The various major industries using output costing methods are Sugar Industry, Paper Industry, Mining Industry, Cement Industry, Breweries Industry and Flour Milling Industry etc.

## Knowledge Assessment - I

**Fill the blanks with the appropriate answers**

1. Output costing is that method of costing which helps in determining the _____and _____ of output or production.
2. The cost per unit is derived by dividing the total cost with the _____.
3. Output costing is widely used by _____ Industry.
4. Output costing is widely used by the concern producing a single product or _____ products.
5. Output costing is also called as _____.
6. Output costing is used in the firm that has single product, consistent manufacturing processes and cost units that are _____.
7. Output costing helps in arriving at the final _____ price for marketers.
8. Cost sheet and _____ are two approaches to output costing.

**[Ans:** 1- Total and per unit cost, 2- Total quantity produced, 3- Sugar/Paper/Mining, 4- Identical, 5- Single costing, 6- Physical and natural, 7- Selling, 8- Production statement/account]

## Session-2: Components of Cost and Treatment For Stock & Scrap

### Components of Cost

The total cost has been divided into sub components representing the cost at various stages. Following are the various components of cost shown in the cost sheet or production account:

1. **Prime Cost**: Prime cost is also named as "Direct Cost", "Flat Cost", "Basic Cost" or "First Cost". It is the summation of all direct costs relating to production, i.e. direct material, direct labour and direct expenses.

2. **Factory Cost:** Factory cost is also named as "Work Cost", "Manufacturing Cost" or "Production Cost". It is the summation of prime cost and factory overheads that includes indirect material, indirect labour and indirect expenses of factory. Factory cost includes all the direct cost relating to product and the indirect cost relating to factory.

3. **Office Cost:** Office Cost is also named as "Cost of Production" or "Administration Cost". Office cost is the summation of factory or work cost and office & administrative overheads. Any cost related to sales and distribution is not the part of office and administrative cost as they form a separate category. This total cost of production is adjusted with the opening and closing stock of finished goods to get the cost of goods sold.

4. **Cost of Sales:** It is also named as "Total Cost". It is derived by adding selling and distribution overheads to the cost of goods sold.

**Illustration 1:** Ashwani Industries is into assembling of chairs and has certain expenditures that are mentioned below. You are required to determine the prime cost.

| Particulars | Amount (Rs.) |
|---|---|
| Cost of chair frames | 1,20,000 |
| Cost of cushions | 75,000 |
| Cost of nuts and bolts | 20,000 |
| Wages paid for the assembling of chairs | 30,000 |

**Solution:**

| | | |
|---|---|---|
| Cost of all Direct Material | = | Cost of chair frames + Cost of cushions + Cost of nuts and bolts |
| | = | 1,20,000 + 75,000 + 20,000 |
| | = | Rs. 2,15,000 |
| Cost of Direct Labour | = | Wages paid for the assembling of chairs |
| | = | Rs. 30,000 |
| Prime Cost | = | Direct Material + Direct Labour |
| | = | 2,15,000 + 30,000 |
| | = | Rs. 2,45,000 |

**Illustration 2:** Following are the cost details of Vimhans Industries. You are required to calculate the factory cost.

| Particulars | Amount (Rs.) |
|---|---|
| Direct material | 2,30,000 |
| Labour cost for manufacturing products | 1,25,000 |
| Direct expenses | 65,000 |
| Rent for factory | 1,00,000 |
| General consumables | 40,000 |
| Salary of factory manager | 32,000 |

**Solution:**

| | | |
|---|---|---|
| Prime Cost | = | Direct material + Labour cost for manufacturing products + Direct expenses |

| | | |
|---|---|---|
| | = | 2,30,000 + 1,25,000 + 65,000 |
| | = | Rs. 4,20,000 |
| Factory Overheads | = | Rent for factory + General consumables + Salary of factory manager |
| | = | 1,00,000 + 40,000 + 32,000 |
| | = | 1,72,000 Rs. |
| Factory Cost | = | Prime Cost + Factory Overheads |
| | = | 4,20,000 + 1,72,000 |
| | = | Rs. 5,92,000 |

**Illustration 3:** Calculate the office cost from the following cost data:

| **Particulars** | **Amount (Rs.)** |
|---|---|
| Direct material | 12,000 |
| Direct labour | 5,000 |
| Direct expenses | 2,000 |
| Power and fuel | 3,500 |
| Office stationery | 1,100 |
| Office telephone charges | 200 |

**Solution:**

| | | |
|---|---|---|
| Prime Cost | = | Direct material + Direct labour + Direct expenses |
| | = | 12,000 + 5,000 + 2,000 |
| | = | Rs. 19,000 |
| Factory Cost | = | Prime Cost + Power and fuel |
| | = | 19,000 + 3,500 |
| | = | Rs. 22,500 |
| Office Cost | = | Factory Cost + Office stationery + Office telephone charges |
| | = | 22,500 + 1,100 + 200 |
| | = | Rs. 23,800 |

## Treatment for Raw Material

The actual value of the raw material consumed is to be included in the cost sheet. Thus, the determination of value of raw material consumed becomes important. For the same, the opening and closing stock of raw material is adjusted with the raw material purchased during the year to arrive at the actual value of raw material consumed.

Value of raw material consumed = Opening stock of raw material + Purchase of raw material – Closing stock of raw material

**Illustration 4**: Find out the value of raw material consumed for M/s Deepika from the following given information:

| Particulars | Amount (Rs.) |
|---|---|
| Opening stock of raw material | 55,000 |
| Closing stock of raw material | 15,000 |
| Purchases of raw material | 80,000 |

**Solution:**

| | | |
|---|---|---|
| Value of raw material consumed | = | Opening stock of raw material + Purchase of raw material – Closing stock of raw material |
| | = | 55,000 + 80,000 – 15,000 |
| | = | Rs. 1,20,000 |

## Treatment for Work-in-Progress

Work-in-Progress is that part of stock which has not been completely manufactured. It requires some more work to be done for becoming the finished goods. They are in such a form which is not yet ready to be sold. It is usually abbreviated as "WIP". It can be valued at prime or factory cost basis. But it is incorrect to value it at prime cost as many of the work overhead expenses get incurred on such goods. Work in progress is to be adjusted before calculating the net factory or work cost. The opening stock of WIP is added and closing stock of WIP is subtracted from gross work cost before arriving at the actual or net work or factory cost.

**Illustration 5:** Show the treatment of Work-in-Progress in the cost sheet from the available given information:

| Particulars | Amount (Rs.) |
|---|---|
| Prime cost | 23,50,000 |
| Factory overheads | 8,53,000 |
| Opening WIP | 2,10,000 |
| Closing WIP | 1,60,000 |

**Solution:**

| | | |
|---|---|---|
| Gross Work Cost | = | Prime cost + Factory overheads |
| | = | 23,50,000 + 8,53,000 |
| | = | Rs. 32,03,000 |

| | | |
|---|---|---|
| Work or Factory Cost | = | Gross Work Cost + Opening WIP – Closing WIP |
| | = | 32,03,000 + 2,10,000 – 1,60,000 |
| | = | Rs. 32,53,000 |

## Treatment for Finished goods

Finished goods are the goods that have been manufactured completely from the production's point of view. It is valued at the cost of production as no further cost is to be added at the factory level. The adjustment for finished goods is of key importance for determining the cost of goods sold. We can arrive at the cost of goods sold by adding opening stock of finished goods and subtracting closing stock of finished goods from cost of production.

Cost of Goods Sold = Cost of production + Opening stock of finished goods – Closing stock of finished goods

**Illustration 6:** Determine the Cost of goods sold for M/s. Darwin Enterprises from the following given information:

| **Particulars** | **Amount (Rs.)** |
|---|---|
| Cost of production | 25,40,000 |
| Opening stock of finished goods | 5,60,000 |
| Closing stock of finished goods | 6,10,000 |

**Solution:**

| | | |
|---|---|---|
| Cost of Goods Sold | = | Cost of production + Opening stock of finished goods – Closing stock of finished goods |
| | = | 25,40,000 + 5,60,000 – 6,10,000 |
| | = | Rs. 24,90,000 |

**Illustration 7:** Find out the Total cost and Factory overheads for Budhiraj & Sons from the following given information:

| **Particulars** | **Amount (Rs.)** |
|---|---|
| Prime cost | 45,400 |
| Factory cost | 52,600 |
| Office overheads | 12,500 |
| Opening stock of finished goods | 1,000 |
| Closing stock of finished goods | 1,500 |
| Salesman salary | 5,000 |

**Solution:**

| | | |
|---|---|---|
| Factory Cost | = | Prime Cost + Factory Overheads |
| Factory Overheads | = | Factory Cost – Prime Cost |
| | = | 52,600 – 45,400 |
| | = | Rs. 7,200 |
| Cost of Production | = | Factory Cost + Office overheads |
| | = | 52,600 + 12,500 |
| | = | Rs. 65,100 |
| Cost of Goods Sold | = | Cost of Production + Opening stock of finished goods – Closing stock of finished goods |
| | = | 65,100 + 1,000 – 1,500 |
| | = | Rs. 64,600 |
| Total Cost | = | Cost of Goods Sold + Salesman Salary |
| | = | 64,600 + 5,000 |
| | = | Rs. 69,600 |

## Treatment for Scrap

Scrap is a left over after the production or manufacturing process of a product. It is of small value which can be sold off to recover some cost. Scrap arises from low quality of raw material and faults in product designing, manufacturing processes etc. The amount realised from the sale of scrap is to be adjusted and should be deducted either from factory overheads or gross work cost.

In case, some material (before being used) are found to be defective and considered to be scrap, then it should be adjusted with the value of raw material used and is to be reduced from the cost of material used. Any loss on sale of such material should be charged to the costing P&L account.

## Knowledge Assessment – II

### Objective Type Questions

**1. Prime cost is not called as**

a. Direct Cost

b. Basic Cost

c. Float Cost

d. Flat Cost

**2. Factory Cost is the summation of**

a. Prime cost and Office overheads

b. Office cost and Office overheads

c. Prime cost and Factory overheads

d. Office cost and selling overheads

**3. Working of cost of goods sold requires**

a. Cost of Production and Opening & Closing stock of finished goods

b. Cost of Production and Opening & Closing stock of raw material

c. Cost of Production and Opening & Closing Work in progress

d. None of the above

**4. What is required to calculate the value of raw material consumed**

a. Opening stock of raw material

b. Closing stock of raw material

c. Raw material purchased during the period

d. All of the above

**5. Factory cost is not known as**

a. Work Cost

b. Industrial Cost

c. Manufacturing Cost

d. Production Cost

**6. Which of these is to be adjusted before calculating the net work cost**

a. Opening and Closing stock of raw material

b. Opening and Closing stock of WIP

c. Opening and Closing stock of finished goods

d. Scrap

**7. Work in Progress is in the form which is**

a. Ready to be sold

b. Ready to be used as raw material

c. Ready to be worked upon for further processing

d. Ready to be kept in warehouse

**8. Office cost is the summation of**

a. Work cost and office & administrative overheads

b. Work cost and selling and distribution overheads

c. Work cost and factory overheads

d. Prime cost and factory overheads

**9. Scrap is**

a. Left over of manufacturing process

b. Sold off to recover cost

c. Of small value

d. All of the above

**10. Total cost is also known as**

a. Cost of production

b. Cost of manufacturing

c. Cost of sales

d. None of the above

**[Ans:** 1(c), 2(c), 3(a), 4(d), 5(b), 6(b), 7(c), 8(a), 9(d), 10(c)**]**

## Session-3: Cost Sheet Approach For Output Costing

The cost data can be presented in two major ways for the purpose of ascertaining, controlling and comparing total and per unit cost. The one is cost sheet discussed in this session and the other is production account discussed in the next session.

### Cost Sheet/Cost Statement

Cost sheet is a statement that presents the total and per unit cost of production with regard to any cost unit or cost centre for a specific period of time. It is prepared in a tabular form presenting the various components of cost at various stages. It can be prepared on weekly, monthly, quarterly, half yearly or yearly basis. Cost sheet helps the accountant to determine the selling price by ascertaining the cost. Cost sheet is also a managerial tool for cost manager to judge the efficiency of production. The various cost components may be compared with the budgeted figures to keep them under control. Opening and closing stock variations in the raw material, work in progress and finished goods are also adjusted in the statement. A cost sheet illustrates the following things:

1. Total Cost of Production
2. Total Quantity of Production
3. Per Unit Cost of Total Quantity Produced
4. Components of Cost, i.e. Prime Cost, Work Cost etc.
5. Opening and Closing Raw Material, WIP and Finished Goods
6. Direct and Indirect Classification of Cost

### Types of Cost Sheet

There are two variants of cost sheet. They are:

a. **Historical Cost Sheet:** Historical cost sheet considers the historical cost value that has actually been incurred. In this cost sheet, historical actual cost is presented for the various

cost components.

b. **Estimated Cost Sheet:** Estimated cost sheet is based on the predictable cost figures which are estimated. The estimation is done by looking at the past figures and analysing the current situation.

## Cost Sheet Proforma

Following is the Proforma which is used for preparing the cost sheet and showing the various elements of cost:

**M/s._____ Enterprises**

**Cost Sheet**

**For the year ending 31st March 20__**

**Production (in units) _____**

| **Particulars** | **Total Cost Amount (Rs.)** | **Per Unit Cost (Rs.)** |
|---|---|---|
| (A) Purchases during the Year | | |
| (B) **Add:** Opening Stock of Raw Material | | |
| (C) **Less:** Closing Stock of Raw Material | | |
| (D) Direct Material Consumed (A+B-C) | | |
| (E) Direct Labour | | |
| (F) Direct Expenses | | |
| (G) Prime Cost (D+E+F) | xxx | xxx |
| (H) **Add:** Factory Overheads | | |
| (I) Gross Factory/Work Cost (G+H) | xxx | xxx |
| (J) **Add:** Opening WIP | | |
| (K) **Less:** Closing WIP | | |
| (L) Factory/Work Cost (I+J-K) | xxx | xxx |
| (M) **Add:** Office and Administrative Overheads | | |
| (N) Cost of Production/Office Cost (L+M) | xxx | xxx |
| (O) **Add:** Opening Finished Stock | | |
| (P) **Less:** Closing Finished Stock | | |
| (Q) Cost of Goods Sold (N+O-P) | xxx | xxx |
| (R) **Add:** Selling and Distribution Overheads | | |
| (S) Total Cost/Cost of Sales (Q+R) | xxx | xxx |

**Illustration 8:** From the books of accounts of M/s. Khurram Enterprises, following details have been extracted for the year ending 31st March, 2015:

| Particulars | Amount (Rs.) |
|---|---|
| Opening stock of raw material | 2,88,000 |
| Closing stock of raw material | 3,00,000 |
| Material purchased during the year | 9,42,000 |
| Direct labour cost | 4,43,000 |
| Indirect wages | 54,000 |
| Salaries to office staff | 2,12,000 |
| Freight outward | 43,000 |
| Repairs for plant and machinery | 21,000 |
| Factory rent and taxes | 55,000 |
| Office rent and taxes | 32,000 |
| Distribution expenses | 76,000 |
| Salesman salaries and commission | 54,000 |
| Manager's salary (40% of his time used in factory & rest in office) | 60,000 |
| Factory electricity charges | 25,000 |
| Office telephone expenses | 5,000 |
| Opening stock of finished goods | 2,03,000 |
| Closing stock of finished goods | 1,12,000 |
| Depreciation of office furniture | 13,000 |

You are required to prepare cost sheet for the firm from the above given details.

**Solution:**

**M/s. Khurram Enterprises**

**Cost Sheet**

**For the year ending 31st March 2015**

| **Particulars** | **Amount (Rs.)** | **Amount (Rs.)** |
|---|---|---|
| (A) Purchases during the year | 9,42,000 | |
| (B) **Add:** Opening stock of raw material | 2,88,000 | |
| (C) **Less:** Closing stock of raw material | (3,00,000) | |
| (D) Direct Material Consumed (A+B-C) | 9,30,000 | 9,30,000 |
| (E) Direct labour cost | | 4,43,000 |
| (F) Prime Cost (D+E) | | 13,73,000 |
| **Add:** Factory Overheads | | |
| Indirect wages | 54,000 | |
| Repairs for plant and machinery | 21,000 | |
| Factory rent and taxes | 55,000 | |
| Manager's salary – Factory | 24,000 | |
| Factory electricity charges | 25,000 | |
| (G) Total Factory Overheads | 1,79,000 | 1,79,000 |
| (H) Factory/Work Cost (F+G) | | 15,52,000 |
| **Add:** Office and Administrative overheads | | |
| Salaries to office staff | 2,12,000 | |
| Office rent and taxes | 32,000 | |
| Manager's salary – Office | 36,000 | |
| Office telephone expenses | 5,000 | |
| Depreciation of office furniture | 13,000 | |
| (I) Total Office and Administrative overheads | 2,98,000 | 2,98,000 |
| (J) Cost of Production/Office Cost (H+I) | | 18,50,000 |
| (K) **Add:** Opening stock of finished goods | | 2,03,000 |
| (L) **Less:** Closing stock of finished goods | | (1,12,000) |
| (M) Cost of Goods Sold (J+K-L) | | 19,41,000 |
| **Add:** Selling and Distribution Overheads | | |
| Freight outward | 43,000 | |
| Distribution expenses | 76,000 | |
| Salesman salaries and commission | 54,000 | |
| (N) Total Selling and Distribution Overheads | 1,73,000 | 1,73,000 |
| (O) Total Cost/Cost of Sales (M+N) | | 21,14,000 |

**Illustration 9:** Prepare a cost sheet to show the total cost and cost per unit of goods manufactured by M/s. Abram Enterprises for the month of January 2015. Also, find out the cost of sales.

| Particulars | Amount (Rs.) |
|---|---|
| Stock of raw material (1.1.15) | 4,000 |
| Stock of raw material (31.1.15) | 5,500 |
| Raw material purchased | 29,000 |
| Manufacturing wages | 8,000 |
| Depreciation on plant | 1,500 |
| Factory rent and rates | 4,000 |
| Office rent | 1,000 |
| General expenses | 1,200 |
| Sales discount | 1,000 |
| Advertising expenses | 5,000 |

The number of units produced during the month was 4,000. The stock of finished goods was 300 and 400 units on 1.1.15 and 31.1.15 respectively. The total cost of units in hand on 1.1.15 was Rs. 3,900. All these had been sold during the month.

**Solution:**

**M/s. Abram Enterprises**

**Cost Sheet**

**For the month ending 31st January 2015**

| Particulars | Amount (Rs.) | Amount (Rs.) | Per Unit (Rs.) |
|---|---|---|---|
| (A) Purchases during the year | 29,000 | | |
| (B) **Add:** Opening stock of raw material | 4,000 | | |
| (C) **Less:** Closing stock of raw material | (5,500) | | |
| (D) Material Consumed (A+B-C) | 27,500 | 27,500 | 6.875 |
| (E) Manufacturing wages | | 8,000 | 2.000 |
| (F) Prime Cost (D+E) | | 35,500 | 8.875 |
| **Add:** Factory Overheads | | | |
| Depreciation on plant | 1,500 | | |
| Factory rent and rates | 4,000 | | |

| | | | |
|---|---|---|---|
| (G) Total Factory Overheads | 5,500 | 5,500 | 1.375 |
| (H) Factory/Work Cost (F+G) | | 41,000 | 10.25 |
| **Add:** Office and Administrative Overheads | | | |
| Office rent | 1,000 | | |
| General expenses | 1,200 | | |
| (I) Total Office and Administrative Overheads | 2,200 | 2,200 | 0.550 |
| (J) Cost of Production/Office Cost (H+I) | | 43,200 | 10.80 |
| (K) **Add:** Opening finished stock | | 3,900 | |
| (L) **Less:** Closing finished stock (10.8*400) | | (4,320) | |
| (M) Cost of Goods Sold (J+K-L) | | 42,780 | |
| **Add:** Selling and Distribution Overheads | | | |
| Sales Discount | 1,000 | | |
| Advertising Expenses | 5,000 | | |
| (N) Total Selling and Distribution Overheads | 6000 | 6,000 | |
| (O) Total Cost/Cost of Sales (M+N) | | 48,780 | |

## Knowledge Assessment – III

**State whether the following statements are true (T) or false (F)**

1. Cost figures in the cost sheet cannot be compared with the past year figures in the same cost sheet for analysis purpose by the management.
2. Cost Sheet can be prepared on weekly, monthly, quarterly, half yearly or yearly basis.
3. Types of cost sheet are past cost sheet and future cost sheet.
4. Advertising expense is a cost component of selling and distribution overheads.
5. Cost sheet is also a managerial tool for cost manager to judge the efficiency of production.
6. Cost sheet tells about quality and labour efficiency of the production.
7. Prime cost, work cost, office cost and total cost are components of cost sheet.
8. Salary to factory manager is a type of office overhead cost.

**[Ans:** 1(F), 2(T), 3(F), 4(T), 5(T), 6(F), 7(T), 8(F)**]**

## Session-4: Production Account Approach For Output Costing

### Production Account/Production Statement

Production statement is another approach to present the cost information for proper ascertainment and analysis. It also presents the same information that cost sheet or statement show. The production statement is said to provide some more information than cost sheet relating to profit or loss and sales value. The presentation of production statement is generally made in a vertical form of account which is called as "Production Account".

## Production Account Proforma

Following is the Proforma for the Production Account:

**_____ Limited**

**Production Account**

**For the year ending 31st March 20__**

| Particulars | Amount (Rs.) | Particulars | Amount (Rs.) |
|---|---|---|---|
| To Direct Material | xxx | By Prime Cost c/d | xxx |
| To Direct Labour | xxx | | |
| To Direct Expenses | _____ | | _____ |
| | _____ | | _____ |
| To Prime Cost b/d | xxx | By Factory Cost c/d | xxx |
| To Factory Overheads | _____ | | _____ |
| | _____ | | _____ |
| To Factory Cost b/d | xxx | By Cost of Production c/d | xxx |
| To Office Overheads | _____ | | _____ |
| | _____ | | _____ |
| To Cost of Production b/d | xxx | By Closing Stock of | xxx |
| To Opening Stock of Finished | xxx | Finished Goods | |
| Goods | _____ | By Cost of Goods Sold c/d | _____ |
| | _____ | | _____ |
| To Cost of Goods Sold b/d | xxx | By Sales | xxx |
| To Selling & Distribution | xxx | | |
| Overheads | | | |
| To Profit | | | |
| | **xxx** | | **xxx** |

**Illustration 10:** The following details have been obtained from the cost records of Dish Dyes Limited for the month of December 2014:

| Particulars | Amount (Rs.) |
|---|---|
| Opening stock of raw material | 1,25,000 |
| Closing stock of raw material | 1,32,000 |
| Direct labour | 62,400 |

| | |
|---|---|
| Indirect wages | 13,500 |
| Sales | 3,46,000 |
| Purchase of raw material | 96,000 |
| Factory rent | 23,000 |
| Depreciation of machinery | 6,600 |
| Opening WIP | 42,000 |
| Closing WIP | 45,000 |
| Carriage inward | 2,000 |
| Carriage outward | 3,000 |
| Advertising | 6,700 |
| Office rent | 4,000 |
| Traveller's wages | 8,800 |
| Opening stock of finished goods | 64,000 |
| Closing stock of finished goods | 22,000 |

Prepare a production account giving the maximum possible breakup of cost and profit.

**Solution:**

**Dish Dyes Limited**

**Production Account**

**For the month ending December 2014**

| **Particulars** | | **Amount (Rs.)** | **Particulars** | **Amount (Rs.)** |
|---|---|---|---|---|
| To Material Consumed | | | By Prime Cost c/d | 1,53,400 |
| Opening stock | 1,25,000 | | | |
| **Add:** Purchases | 96,000 | | | |
| **Add:** Carriage inward | 2,000 | | | |
| **Less:** Closing stock | 1,32,000 | 91,000 | | |
| To Direct labour | | 62,400 | | |
| | | 1,53,400 | | 1,53,400 |
| To Prime Cost b/d | | 1,53,400 | By Gross Factory Cost c/d | 1,96,500 |
| To Indirect wages | | 13,500 | | |
| To Factory rent | | 23,000 | | |

| | | | |
|---|---|---|---|
| To Depreciation on machine | 6,600 | | |
| | 1,96,500 | | 1,96,500 |
| To Gross Factory Cost b/d | 1,96,500 | By Closing WIP | 45,000 |
| To Opening WIP | 42,000 | By Factory Cost c/d | 1,93,500 |
| | 2,38,500 | | 2,38,500 |
| To Factory Cost b/d | 1,93,500 | By Cost of Production c/d | 1,97,500 |
| To Office rent | 4,000 | | |
| | 1,97,500 | | 1,97,500 |
| To Cost of Production b/d | 1,97,500 | By Closing stock of finished goods | 22,000 |
| To Opening stock of finished goods | 64,000 | By Cost of Goods Sold c/d | 2,39,500 |
| | 2,61,500 | | 2,61,500 |
| To Cost of Goods Sold b/d | 2,39,500 | By Cost of Sales b/d | 2,58,000 |
| To Carriage outward | 3,000 | | |
| To Advertisement | 6,700 | | |
| To Traveller's wages | 8,800 | | |
| | 2,58,000 | | 2,58,000 |
| To Cost of Sales c/d | 2,58,000 | By Sales | 3,46,000 |
| To Profit | 88,000 | | |
| | 3,46,000 | | 3,46,000 |

## Knowledge Assessment – IV

**Fill the blanks with the appropriate answers**

1. The presentation of production statement is generally made in an account form which is called as _____.
2. _____ is another approach, apart from cost sheet, to present the cost information for proper ascertainment and analysis.
3. Production account depicts various components of _____.
4. Production statement is said to provide some more information than cost sheet regarding _____ and sales value.
5. The expenses like factory rent and depreciation of plant is shown on the _____ side of production account.
6. At the end of production account, the loss figure will come on the _____ side of the account.
7. Sales traveller's wages is a part of _____ overhead cost.
8. Presentation of production account is made in a _____ form.

**[Ans: 1-** Production account, 2- Production statement, 3- Cost, 4- Profit or loss, 5- Debit, 6- Credit, 7- Selling and distribution, 8- Vertical account**]**

## Keywords

- **Output Costing:** Output costing is the method in which cost per unit of output or production is ascertained and the amount of each element constituting such cost is determined.
- **Cost Sheet:** Cost sheet is a tool to present the total and per unit cost of production with regard to any cost unit or cost centre for a specific period of time.
- **Prime Cost:** Prime cost is the summation of all direct costs relating to production.
- **Factory Cost:** Factory cost is the summation of prime cost and factory overheads that include indirect material, indirect labour and indirect expenses of factory.
- **Office Cost:** Office cost is the summation of factory or work cost and office & administrative overheads.
- **Cost of Sales:** Cost of sales is the summation of selling and distribution overheads and cost of goods sold.
- **Work in Progress:** Work in progress is that part of stock which has not been completely manufactured.
- **Finished Goods:** Finished goods are the goods that are manufactured completely from the production's point of view.
- **Scrap:** Scrap is a left over after the production or manufacturing process of a product.
- **Production Account:** Production account is a T-form account that presents the cost information for proper ascertainment and analysis.

## Summary

- Various methods of costing are job costing, unit costing, batch costing, process costing, operating costing and contract costing.
- Output costing method is useful in determining the total and per unit cost of output.
- Various major industries using output costing methods are Sugar Industry, Paper Industry, Mining Industry, Cement Industry, Breweries Industry and Flour milling Industry etc.
- Major component of costs are Prime Cost, Factory Cost, Office Cost, Cost of Goods Sold and Cost of Sales.
- Cost sheet and production statement are the tools to showcase the total cost of production with regard to any cost unit or cost centre for a specific period of time for proper ascertainment and analysis.

## Exercise Questions

### Short Answer Questions

1. What do you mean by output costing?
2. Name the Industries that make use of output costing?
3. What do you mean by Prime cost and Factory cost?
4. What do you understand by the term called "Cost of Production"?
5. How do you adjust stock of finished goods?
6. What is work in progress?
7. What are selling and distribution overheads?
8. State some examples of office and administration overheads?
9. What is Scrap? How does it arise?
10. What do you mean by the term "Cost Sheet"?
11. What are the benefits of preparing cost sheet?
12. Which are the types of cost sheet?
13. What is production account or statement?
14. Why production account is prepared?
15. How production account is different from cost sheet?

### Long Answer Questions

1. What is output costing? Which are other different methods of costing?
2. Which are the industries that use the output costing and why?
3. What are the various components of cost? Explain them in detail with relevant examples.
4. Show the adjustments to be made for opening and closing stock of raw material, WIP and finished goods in cost sheet?
5. What do you mean by the term "Scrap" and how it is to be treated in the cost sheet?
6. What is a Cost Sheet? Why it is prepared and what information does it provides to an accountant?
7. Briefly explain the term "Cost sheet" along with its basic Proforma? How does it help in determining the cost of sales? Also, explain its major types?
8. What do you mean by production account or statement? How it is different from cost sheet? Also, show the various elements that form part of the production account.

## Numerical Questions

1. Calculate the Prime cost from the following cost information given below:

| Particulars | Amount (Rs.) |
|---|---|
| Labour used for production | 55,000 |
| Material used for manufacturing | 1,02,000 |
| Factory rent | 67,000 |
| Carriage inward | 13,000 |
| Depreciation of office furniture | 7,600 |

(**Ans.** Prime Cost: Rs. 1,70,000)

2. Determine the office cost for Maxwell Pvt. Ltd. for the month of June 14 from the following cost information available:

| Particulars | Amount (Rs.) |
|---|---|
| Raw material (1st Jun 14) | 22,000 |
| Raw material (30th Jun 14) | 12,000 |
| Purchase of raw material | 43,000 |
| Labour cost for production | 54,000 |
| Direct expenses | 21,000 |
| Work in progress (1st Jun 14) | 28,000 |
| Work in progress (30th Jun 14) | 42,000 |
| Wages for factory security guard | 14,000 |
| Factory generator charges | 21,000 |

(**Ans.** Office Cost: Rs. 1,49,000)

3. Crystal & sons is interested in determining their total cost for analysis purpose for the quarter April-June 2014. Use the following cost data to determine the total cost:

| Particulars | Amount (Rs.) |
|---|---|
| Prime cost | 1,45,000 |
| Supervision cost for factory | 12,000 |

| | |
|---|---|
| Office stationery | 5,000 |
| Office expenses | 14,000 |
| Opening stock of finished goods | 23,800 |
| Closing stock of finished goods | 22,000 |
| Advertisement | 15,500 |
| Distribution expenses | 16,000 |

You are also required to prepare the cost sheet for the organization.

(**Ans**. Total Cost: Rs. 2,09,300)

4. A factory produces a standard product. The following information is given from which you are required to prepare Cost Sheet for the year ending March 2015:

| **Particulars** | **Amount (Rs.)** |
|---|---|
| Raw material (Opening) | 18,000 |
| Raw material (Purchases) | 54,000 |
| Raw material (Closing) | 15,000 |
| Direct labour | 42,000 |
| Direct expenses | 17,000 |
| Factory overheads | 80% of Direct labour |
| Office overheads | 20% of Work Cost |
| Finished goods (Opening) | 19,500 |
| Finished goods (Closing) | 14,000 |
| Distribution expenses | 22,400 |
| Salesmen commission | 10% of Distribution expenses |

(**Ans.** Cost of Sales: Rs. 2,09,660)

5. The following details have been obtained from the cost records of Starlight Ltd.:

| **Particulars** | **Amount (Rs.)** |
|---|---|
| Raw material (Opening) | 95,000 |
| Raw material (Closing) | 98,400 |

| | |
|---|---|
| Direct wages | 32,000 |
| Indirect wages | 3,500 |
| Sales | 3,31,000 |
| Work-in-progress (Opening) | 23,000 |
| Work-in-progress (Closing) | 34,000 |
| Purchase of raw material | 86,000 |
| Factory rent and rates | 19,000 |
| Depreciation of machinery | 4,200 |
| Freight | 2,600 |
| Carriage outward | 5,600 |
| Advertising | 13,300 |
| Office rent and taxes | 7,800 |
| Traveller, wages and commission | 8,900 |
| Opening stock of finished goods | 1,04,000 |
| Closing stock of finished goods | 87,000 |

Prepare a production account giving the maximum possible breakup of cost and profit.

(**Ans.** Total Cost: Rs. 1,85,500, Profit: Rs.1,45,500)

# UNIT - 2

## JOB AND BATCH COSTING

| Unit Code-2 | UNIT TITLE: JOB AND BATCH COSTING | | | |
|---|---|---|---|---|
| **Location:** Class Room | **Session-1: Introduction and Objectives of Job Costing** | | | |
| | **Learning Outcome** | **Knowledge Evaluation** | **Performance Evaluation** | **Teaching & Training Method** |
| | 1. Meaning of job costing.<br><br>2. Objectives of the job costing.<br><br>3. Advantages of job costing.<br><br>4. Limitations of job costing. | 1. Explain the meaning of Job costing.<br><br>2. Mention the objectives of job costing.<br><br>3. Elaborate the advantages of job costing.<br><br>3.Explain the limitations of job costing in comparison toother costing methods. | 1.Describe the specific order costing.<br><br>2. Identify the industries in which job costing is used.<br><br>3. Explain the advantages of job costing for different industries.<br><br>4. Mention major limitations of job costing. | **Interactive Lecture:** Introduction to Job Costing.<br><br>**Activity:** Conceptual Case discussion. |
| | **Session-2: Procedure of Job Costing** | | | |
| | 1. Procedure of preparingjob cost sheet. | 1. Discuss various stages of job costing.<br><br>2. Describe the relevance of assigning job numbers.<br><br>3. Discuss the components of job cost sheet. | 1. Prepare the format of production order.<br><br>2. Describe the procedure of preparing job cost sheet. | **Interactive Lecture:** Procedure of Job Costing.<br><br>**Activity:** Preparation of the job cost sheet using industry data. |

| Session-3: Introduction, Uses and Procedure of Batch Costing | | | | |
|---|---|---|---|---|
| | 1.Concept of Batch costing and its objectives. | 1. Define the concept of Batch Costing.<br><br>2. Explain the objectives of batch costing.<br><br>3. Differentiate job costing and batch costing. | 1. Identify the industries in which Batch costing is used. | **Interactive Lecture:** Introduction to Batch Costing.<br><br>**Activity:** Discussion of brief cases from industries inwhich batch costing is used. |
| | 2. Concept of Economic Batch Quantity.<br><br>3. Formulae of EBQ determination. | 4. Describe Economic Batch Quantity.<br><br>5. Explain the method of EBQ determination with the help of a relevant example. | 2. Explain the usefulness of EBQ in industry. | **Interactive Lecture:** Procedure of determination of EBQ.<br><br>**Activity:** Determination of EBQ on Industry data. |

## Learning Objectives

After reading this unit, students will be able to:

- understand the meaning of job costing and batch costing;
- explain the objectives of job costing and batch costing;
- identify the industries in which job and batch costing methods are used;
- describe the costing procedure used to ascertain the cost of a job or a batch;
- determine Economic Batch Quantity (EBQ); and
- explain the meaning of certain keywords.

Since beginning of cost accounting, various costing methods have been evolved to compute manufacturing cost of products and services as per the need of the industry. Each organization or industry has its own way of costing the products and services. However, basic principles relating to cost computation remain same in all methods of costing. Costing Methods used in various industries are broadly classified into two categories: (1) Specific Order Costing (2) Continuous Operation Costing.

In case of special-order concerns products produced or jobs undertaken are of diverse nature. They involve materials and labour in different quantities and entail different amounts of overhead costs. In such concerns, it is necessary to keep a separate record of each lot of products or jobs from the time the work on the job or product begins till it is completed. A separate job card or cost sheet is maintained for each job or product in which all expenses of materials, labour, overheads are entered and cost of completing a job or manufacturing a product is found out. Such a cost system is known as job or terminal or specific costing.The specific order costing methods are further classified into (i) Job Costing (ii) Batch Costing and (iii) Contract Costing. On the other hand**,** continuous operation costing methods

are adopted by the business organizations which are involved in mass production of products. Products will be sold from stock and will not be produced according to the specific need of the customers. The continuous operation costing includes process costing, operation costing, output costing and service costing.

This chapter is focused on specific order costing comprising of job and batch costing methods, remaining costing methods will be discussed later in the book.

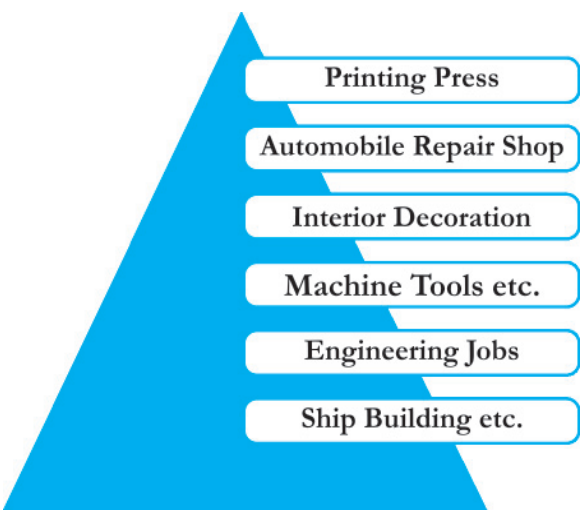
## Session-1: Introduction to Job Costing

Job refers to a customized work order received from customers as per their needs and requirements. A job is a cost unit which consists of a single order. For example; tailor-made garments are made according to the choice and size of the individual customer. In this costing method, each element of cost, i.e. direct materials, direct labour and overheads incurred on production is identifiable with a particular job. A separate job card or cost sheet is maintained for each job or product in which all expenses incurred on the job would be included and finally, the cost of manufacturing a product or completing a job is found.

Job costing can be defined as "that form of specific order costing which applies where work is undertaken to customers' special requirements and each order is of comparatively of short duration (compared with those to which contract costing applies). The work is usually carried out within a factory or workshop and moved through processes and operations as a continuously identifiable unit. The term may also be applied to work such as property repairs and the method may be used in the costing of internal capital expenditure jobs."

Job costing is used in engineering jobs, ship building, printing press, automobile servicing shop, furniture making, fabrication jobs, interior decoration, and machine tools etc.

### Industries Using Job Costing




### Features of Job Costing

Special features of job costing are as follows:

1. Production order is customized as per customer's requirements.

2. Each job has unique characteristics and requires special attention.
3. It is concerned with the cost of each job irrespective of time taken for the job.
4. Cost of each job comprises of direct materials, direct labour and overheads.
5. Flow of production from one department to another department is not uniform it depends on the nature of the job.

## Objectives of Job Costing

Objectives of job costing are as follows:

1. It ascertains the cost of each job separately and also indicates the profit or loss made out on its completion. It also helps in decision making regarding continuation or discontinuance of job.
2. It assists the management in controlling the cost of each job by comparing the actual cost with the estimated cost.
3. It provides a basis for determining the cost of similar jobs to be undertaken in future and quoting the appropriate price for the same.

## Advantages of Job Costing

Advantages of job costing are as follows:

1. Data generated by the job costing records can be used for analysis and cost control by the management.
2. It indicates the profitable or non-profitable jobs.
3. It can be easily fitted into the double entry system.

## Disadvantages of Job Costing

Major problems associated with the job costing method are as follows:

1. It is too expensive.
2. It is very time consuming.
3. It is very tedious task to maintain separate records for each job.

## Knowledge Assessment - I

### Multiple Choice Questions

**1. Job costing is ideally suited for which of the following?**

a) Food processing company

b) Automobile repair shop

c) City bus transport service

d) None of the above

**2. Job costing is suitable for**

a) Non-specific needs

b) Specific needs

c) None of the above

d) Both of the above

**3. Which one of the following is the objective of job costing:**

a) It ascertains the cost of each job separately and also indicates the profit or loss making jobs.

b) It helps the management in controlling the cost of each job by comparing the actual cost with the estimated cost on each job.

c) It helps in decision making regarding continuation or discontinuance of job.

d) All of the above.

**4. Which one of the following is an example of a direct cost in the manufacturing of Almond jelly?**

a) Salary of supervisors

b) Almonds

c) Electricity

d) Depreciation

**5. Which one of the following costs would be an indirect cost in the manufacturing of a LCD?**

a) Picture tube

b) Assemblers wages

c) LCD screen

d) Electricity

**6. Actual costing is not usually used because:**

a) Actual overhead cannot be determined until the end of the year, which is too late for some decisions that need to be made.

b) The actual units of the basis of allocation cannot be determined until the year is over, which is too late for some decisions that need to be made.

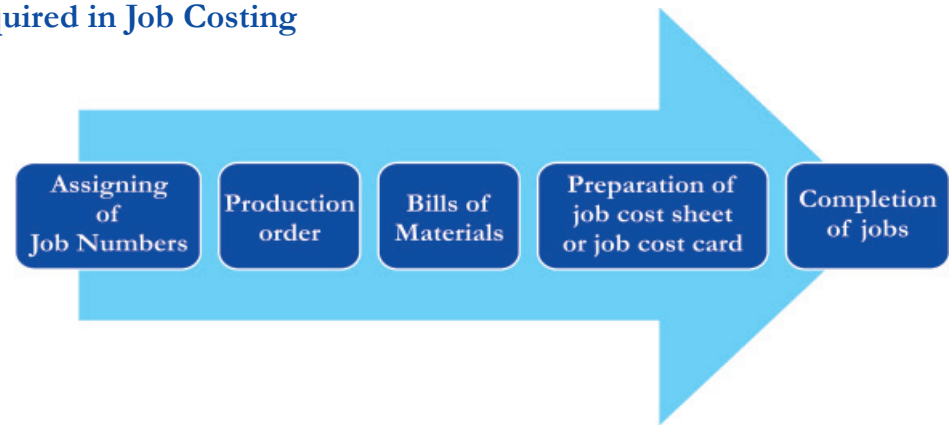
c) Normal costing controls the inefficient use of resources.

d) All of the above are reasons for not using actual costing.

**[Ans:** 1(b), 2(b), 3(d), 4(b), 5(d), 6(d)**]**

## Session-2: Job Costing Procedure

### Steps Required in Job Costing




The following is the procedure for implementation of job costing:

1. **Job Identity Number:** when a work order is received, a unique job number must be assigned to each job for the identification of the same. This number will remain same throughout the production process.

2. **Production Order:** It is an authority letter, issued by the production control department to manufacturing department to initiate work on the job. Multiple copies of production order are created and sent to the following departments:

   i. All departmental foreman concerned with the job

   ii. Storekeeper for issuance of materials

   iii. Tool room for an advance notification of tools required.

**Proforma - Production Order**

| | | | | | |
|---|---|---|---|---|---|
| Product..... | | | | Production Order No..... | |
| Ordered by..... | | | | Date of Order..... | |
| Date to commence..... | | | | Date to Complete..... | |
| | | | | Authorized by…….. | |
| Qty. | Description | Bill of Materials No. | Drawing No. | List of Tools Symbol No. | Pattern No |
| | | | | | |
| For Office Use: | | | | | |
| Entered in Cost Sheet No……..... Date actually started..... | | | | | |
| By.....Date actually finished..... | | | | | |
| Checked by.....Quantity actually produced.. | | | | | |

3. **Bill of Materials:** It is a list of materials and stores required for a particular job is prepared by the Production and Planning Department for the smooth execution of the job is known as the bill of materials. This document serves the purpose of the prior intimation to the storekeeper who may arrange essential materials and stores for the job. The foreman of the concerned job receives a copy of bill of materials along with the production order for showing it to the storekeeper at the time of collection of materials from him.

4. **Job Cost Sheet or Job Cost Card:** A separate job cost sheet is prepared for each job including all expenses incurred in the completion of a job. Cost sheet is prepared according to the job rather than according time consumed in completing a job. Following are the components of job cost sheet and method of determining the cost of each element:

   **(a) Materials:** Cost of materials consumed in each job is recorded in the materials or stores requisition slips. These slips can also be used to extract information regarding cost of materials or stores used. Generally, in case of large job orders, material abstracts are prepared for determining the value of materials consumed in various jobs. The value of material is used for entries in stores ledger control account and work-in-progress control account.

   **(b) Labour:** In case of large size business organizations where multiple jobs are undertaken at a time, estimation of labour cost incurred on each job is done by preparing 'Wage Abstract'. On the other hand, small organizations use job cards, time sheets, clock cards etc. to compute the cost of labour. The total of wages chargeable to various jobs is debited to work-in progress control account. Wages paid for indirect labour will be included under the head of factory overheads.

   **(c) Overheads:** Indirect materials, indirect wages and indirect expenses which cannot be identified with a specific job are known as overheads. Factory overheads are apportioned on the basis of a predetermined rate. The rate may be based on direct labour hours, direct labour cost, machine hours, total cost or other recognized basis.

5. **Completion of Job:** When job is completed, 'Job Completion Report' is sent to the costing department for ascertaining the profits or losses occurred on the job. All costs incurred on a job are debited to job account and value of job or sales price of job is credited to the job account. The difference of the two sides will be the profit or loss suffered on the job.

   The following is the proforma for preparing the job cost sheet. The direct materials, direct labor and direct overheads absorbed in a job are collected and recorded in the below mentioned manner:

**Proforma- Job Cost Sheet**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Product..... | | | Job No..... | | | Customer..... | | |
| Customer's purchases order No..... | | | | | | | | |
| | | | | | | Date of Commencement..... | | |
| | | | | | | Date of Completion..... | | |
| Department X | | | | | | | | |
| Direct Material Cost | | | Direct Labour Cost | | | Factory Overheads | | |
| Date | Reference | Amount | Date | Reference | Amount | Date | Reference | Amount |
| | (Store Req. No.) | | | Worker's Ticket No | | | | (Based on pre-determined overhead rate) |
| Department Y | | | | | | | | |
| Direct Material Cost | | | Direct Labour Cost | | | Factory Overheads | | |
| Date | Reference | Amount | Date | Reference | Amount | Date | Reference | Amount |
| | (Store Req. No.) | | | Worker's Ticket No | | | | (Based on pre-determined overhead rate) |

| Summary | | | | |
|---|---|---|---|---|
| Selling Price xxxx | | | | |
| | Deptt. X | Deptt. Y | Total | |
| Costs: Direct Material | x x | x x | x xx | |
| Direct Labour | x x | x x | x xx | |
| Factory Overheads | x x | x x | x xx | |
| Total Cost | x x | x x | x xx | x xxx |
| Gross Profit | | | | x xxx |

**Illustration 1:** The Tomsay Ltd. has the following cost data for the year 2013:

| **Description** | **Production Department Amount (Rs.)** | **Finishing Department Amount (Rs.)** |
|---|---|---|
| Material used | 50,000 | 20,000 |
| Direct Labour cost | 80,000 | 60,000 |
| Overhead (Actual) | 96,000 | 40,000 |
| Machine hours | | 2,000 |

Compute (a) the overhead rates to be used for 2014 based on direct labour cost for the production department and machine hours for the finishing department and (b) the total overhead to be applied to Job No. 502, which had Rs. 3000 direct labour cost in production department and 250 working hours in the Finishing Department.

**Solution:**

**(a) Overhead Rates:** Production Department, based on direct labour cost:

$$\frac{\text{Overhead cost}}{\text{Direct Labour cost}} = \frac{96{,}000}{80{,}000} = 1.2$$

Finishing Department based on Machine hours:

$$\frac{40{,}000}{2{,}000} = \text{Rs. 20 per machine hour}$$

| **(b) Overhead applied to Job No. 502** | **Amount (Rs.)** |
|---|---|
| Direct Labour Cost (Rs. 3,000 @ Rs. 1.2 ) | 3,600 |
| Machine Hours (250 hours @ Rs. 20 per hour) | 5,000 |
| Overhead applied | 8,600 |

**Illustration 2:** In an automobile factory, various jobs are undertaken in the premises in two departments. The following informationis related to the cost incurred on Job No. 103:

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

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

**Solution:**

**Cost Sheet**

**Job No. 103**

| **Particulars** | | **Amount (Rs.)** | **Amount (Rs.)** |
|---|---|---|---|
| Direct Materials | | 6,830 | |
| Direct Wages: | | | |
| Department A | (100 hours @ 2.00 per hour) | 200 | |
| Department B | (50 hours @ 3.00 per hour) | 150 | |
| | Prime Cost | | 7,180 |
| **Overheads:** | | | |
| **Variable:** | | | |
| Deptt. A | $\frac{3,000}{2,000}$ x 100 | 150 | |
| Deptt. B | $\frac{5,000}{2,500}$ x 50 | 100 | 250 |
| Fixed: | $\frac{6,500}{10,000}$ x 50 | | 98 |
| | Total Cost | | 7,528 |
| | Profit | | 2,722 |
| | Selling Price | | 10,250 |

**Illustration 3: (Scrap)** SARA engineering has Job No. 238 which is conducted in three departments namely X, Y and Z. Information available regarding this job is as follows:

| **Particulars** | **X** | **Y** | **Z** |
|---|---|---|---|
| Materials required for job (in Rs.) | 10,000 | 1,200 | 700 |
| Direct labour hour (No. of hours) | 1,000 | 2,000 | 5,000 |
| Rate of direct labour per hour (in Rs.) | 2.00 | 2.50 | 3.00 |
| Sale of scrap of materials arising from job (in Rs.) | 1,000 | 250 | 50 |
| Overheads of departments (in Rs.) | 11,000 | 13,500 | 25,000 |
| Labour hours of departments | 10,000 | 30,000 | 40,000 |

Prepare job cost sheet from the above given information.

**Solution:**

**Cost Sheet**

**Job No. 238**

| Particulars | | Amount (Rs.) | Amount (Rs.) |
|---|---|---|---|
| **Direct Material (less scrap)** | | | |
| Department X | (10,000 -1,000) | 9,000 | |
| Department Y | (1,200- 250) | 950 | |
| Department Z | (700 – 50) | 650 | 10,600 |
| **Direct Wages:** | | | |
| Department X | (1,000 hours @Rs. 2.00 per hour) | 2,000 | |
| Department Y | (2,000 hours @ Rs. 2.50 per hour) | 5,000 | |
| Department Z | (5,000 hours @ Rs. 3.00 per hour) | 15,000 | 22,000 |
| | **Prime Cost** | | 32,600 |
| **Overhead:** | | | |
| Department X | $\frac{11000}{10,000}$ x 1000 = 1,100 | 1,100 | |
| Department Y | $\frac{13,500}{30,000}$ x 2000 = 900 | 900 | |
| Department Z | $\frac{25,000}{40,000}$ x 5000 = 3,125 | 3,125 | 5,125 |
| | **Total Cost** | | **37,725** |

## Calculation of Work-in-Progress

Various cost control accounts are maintained in the costing ledgers. Work-in-Progress accounts are separately maintained for each job, product or process. All expenses namely Materials, Labor andoverheads which are incurred on job, product or process will be debited to Work-in-Progress account and the cost of production of completed jobs is credited to Work-in-Progress account. The difference between debit and credit will indicate the value of incomplete jobs.

One Work-in-Progress account can be prepared for the whole factory that is called as composite account. A separate account can be prepared for each department or process. It will depend on the nature of business.

## Job Ticket

The production and planning department issues job ticket to provide up-to-date information regarding the status of each job completion at each operation. Job ticket comprises of hook-on section of each operation. On the Job completion of each operation , relevant portion is detached from the ticket and sent it to the production and planning department for the keeping the production schedule up-to-date.

It is a very important document for both Production and Planning Department and costing department. With the help of job ticket "Departmental Summary of Production" can be prepared which is very useful for costing purposes.

## Progress Advice

Progress advice is prepared to ensure the timely completion of each job. This indicates the stages of completion of each job. Periodically, foreman of each job sends it to the production and planning department.

**Illustration 4: (Work-in-Progress)** The following information for the year ended on 31st March 2014 is obtained from the records of a mobile cover making factory:

| Particular | Completed Jobs Amount (Rs.) | Work-in-Progress Amount (Rs.) |
|---|---|---|
| Raw material supplied from stores | 2,00,000 | 60,000 |
| Labour | 1,25,000 | 10,000 |
| Direct Expenses | 12,000 | 5,000 |
| Material transferred to Work-in-Progress | 3,000 | 3,000 |
| Material returned to stores | 2,000 | ——— |
| Works overhead employed in job is 70% of labour and office overhead is 25% of factory cost. Worth of job at the end was Rs. 5,50,000. | | |

Prepare (i) Completed Job Ledger Control Account (ii) Work-in-Progress Ledger Control Account (iii) Cost of Sales Account

**Work-in-Progress Ledger Control Account**

| Particulars | | Amount (Rs.) | Particulars | Amount (Rs.) |
|---|---|---|---|---|
| To Raw material consumed: | | | By Balance c/d | 1,06,250 |
| Supplied from stores | 60,000 | | | |
| **Add:** Transfer from WIP | 3,000 | 63,000 | | |
| To Labour | | 10,000 | | |
| To Direct expenses | | 5,000 | | |
| **Prime Cost** | | 78,000 | | |
| To Factory overhead (70% of labour cost) | | 7,000 | | |
| **Work Cost** | | 85,000 | | |
| To Office overhead (25% of factory cost) | | 21,250 | | |
| **Total Cost** | | **1,06,250** | | **1,06,250** |

**Completed Job Ledger Control Account**

| Particulars | | Amount (Rs.) | Particulars | Amount (Rs.) |
|---|---|---|---|---|
| To Raw material consumed: | | | By Cost of Sales | 5,24,375 |
| Supplied from stores | 2,00,000 | | | |
| **Less:** Transfer to WIP | 3,000 | | | |
| **Less:** Return to stores | 2,000 | 1,95,000 | | |
| To Labour | | 1,25,000 | | |
| To Chargeable expenses | | 12,000 | | |
| **Prime Cost** | | 3,32,000 | | |
| To Factory overhead (70% of labour cost) | | 87,500 | | |
| **Work Cost** | | 4,19,500 | | |
| To Office overhead (25% of factory cost) | | 1,04,875 | | |
| | | **5,24,375** | | **5,24,375** |

**Cost of Sales Account**

| Particulars | Amount (Rs.) | Particulars | Amount (Rs.) |
|---|---|---|---|
| To completed Jobs A/c | 5,24,375 | By Sales | 5,50,000 |
| To Profit | 25,625 | | |
| | 5,50,000 | 5,50,000 | |

## Knowledge Assessment - II

### Multiple Choice Questions

1. **Which account would be debited in recording a materials requisition for direct materials?**

   a. Raw Materials Inventory

   b. Factory Overhead

   c. Raw Materials Purchases

   d. Goods in Process Inventory

2. **Document used for determining job cost?**

   a. Wage abstract

   b. Materials requisition slip

c. Job cost card

d. None of the above

e. All of the above

**3. The predetermined overhead rate is Rs. 10.12 per direct labour hour. Job 913 required 410 direct labour hours of which 309 hours were incurred for completing this job. Calculate amount of overhead should be applied to Job 913?**

a. Rs. 3,066.00

b. Rs. 3,127.08

c. Rs. 4149.20

d. Rs. 1,281.00

**4. Production reports for the second quarter show the following data:**

| Month | Machine-Hours | Direct Labour Hours | Direct Materials Cost | Actual Overhead |
|---|---|---|---|---|
| April | 9,000 | 12,000 | Rs. 32,000 | Rs. 45,020 |
| May | 12,000 | 10,000 | Rs. 28,500 | Rs. 60,000 |
| June | 10,000 | 9,000 | Rs. 45,000 | Rs. 50,100 |

Which variable would be the most likely basis for allocating overhead?

a. Machine-hours

b. Labour Hours

c. Labour Cost

d. Materials Cost

**5. Direct Materials Consumed:** Rs. 25,000

Factory overhead: Rs. 35,000

Beginning goods in process: Rs. 0

Ending goods in process: Rs. 8,000

Cost of goods manufactured: Rs. 60,000

Calculate the amount of Direct Labour?

a. Rs. 8, 000

b. Rs. 1,28,000

c. Rs. 5,000

d. Rs. 68,000

6. **Job No. 201 was in process at the end of the accounting period. The total cost involved in the Job is Rs. 15,000 of which Rs. 5,000 is direct material. Factory overhead is allocated to goods in process at 150% of direct labour cost. Compute the amount of direct labour charged to Job No. 201**

   a. Rs. 9,000

   b. Rs. 4,000

   c. Rs. 4,000

   d. Rs. 3,000

7. **The document which provides information regarding the progress of each job at each operation is known as:**

   a. Progress advice

   b. Job ticket

   c. Job order

   d. None of the above

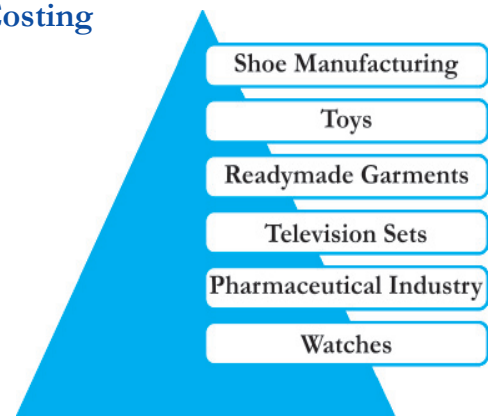
**[Ans:** 1 (d), 2 (c), 3 (b), 4(a), 5(a), 6(b), 7(b)**]**

## Session-3: Introduction, Nature and Uses of Batch Costing

### Introduction

A batch refers to the bunch of identical items of products or components. Batch Costing is defined as "that form of specific order costing which applies where similar articles are manufactured in batches either for sale or for use within the undertaking". Batch costing is very similar to job costing. Whenever, a particular product is required, one unit of such product is not manufactured but a lot of say 500 or 1000 units of such product are produced. It is therefore also known as "Lot Costing".

### Industries Using Batch Costing




### Batch Costing Procedure

Each batch is treated as a job or cost unit; therefore, procedure of job costing can be used for batch costing also. Each component of cost i.e. Direct Materials, Direct Labour, and Overheads are estimated

for a lot or batch rather than individual unit. Numbers are assigned to each batch material requisitions, wage abstracts and overheads are also prepared for each batch. When a batch is completed, the total cost of the batch is divided by quantity produced in the batch to arrive at the cost per unit as required.

## Determination of Economic Batch Quantity

As we know, each batch contains multiple units. Therefore, deciding optimum quantity in each batch is a very important decision to minimize the cost of production. Inventory control principle of calculating the Economic Order Quantity (EOQ) will be used to compute Economic Batch Quantity (EBQ). Formulae for calculating the same is as follows:

Economic Batch Quantity = $\sqrt{(2U \times P)/S}$

U = Annual Demand

P = Setting up and order placing costs (per batch)

S = Storage or inventory carrying over cost per unit per annum

**Illustration 5:** A pharmaceutical company is having annual demand of its medicine 9,000 units. For the production of units, company has to bear setting up and order processing cost of Rs. 220. Cost of manufacturing one unit is Rs. 1,250. Cost of carrying is 10% per annum.

**Solution:**

$$\text{Economic Batch Quantity} = \sqrt{\frac{(2x\ 9{,}000 \times 220)}{(1250 \times 10\%)}}$$

$$= \sqrt{\frac{396000}{125}}$$

= 177.98 units or 178 units

**Illustration 6 :** XYZ Company manufacture components of shoes in a cost centre:

| | |
|---|---|
| Materials cost | Rs. 6 per component |
| Time consumed in manufacturing | 10 minutes in manufacturing per component |
| Machine hour rate | Rs. 15 per hour |
| Machine operator is paid | Rs. 7.2 per hour |

The setting-up of the machine to produce component of shoes; taken 2 hours 30 minutes.

Using above given information, prepare a comparative cost sheet presenting the production and setting up cost, both in total and per component assuming a batch of

(a) 100 components (b) 1000 components (c) 10,000 components are produced.

**Solution:**

| Particular | Batch size in components | | |
|---|---|---|---|
| | **100** | **1000** | **10,000** |
| **Set up cost:** | | | |
| Machine operators wages (2.5 hours @ Rs. 7.2 per hour) | 18.00 | 18.00 | 18.00 |
| Machine hour rate (2.5 hours @ Rs. 15 per hour) | 37.50 | 37.50 | 37.50 |
| **Production Cost:** | 55.50 | 55.50 | 55.50 |
| Material cost (Rs. 6 per component) | | | |
| Time consumed (10 minutes per component) | 600.00 | 6000.00 | 60000.00 |
| Cost of time is 7.2 per hour $\frac{10}{60}$ x 7.2 = | 120.00 | 1200.0 | 12000.00 |
| Overheads@ 15 per hour | | | |
| $\frac{10}{60}$ x 100 x 15 = | 250.00 | | |
| $\frac{10}{60}$ x 1,000 x 15 = | | 2500.00 | |
| $\frac{10}{60}$ x 10,000 x 15 = | | | 25000.00 |
| **Total cost** | **1025.50** | **9755.50** | **97055.50** |
| **Cost per Component** | **10.25** | **9.75** | **9.70** |

## Knowledge Assessment- III

**State with reasons whether following is True (T) or False (F):**

1. Batch costing procedure is similar to job costing procedure.
2. Setting up cost increases with the increase in batch size.
3. Batch costing is suitable for pharmaceutical industry.
4. Computation method of Economic Batch Quantity is based on the principle of Economic Order Quantity.
5. Wage Abstract is not prepared in case of batch costing.
6. Each batch is treated as a job or cost unit.

**[Ans:** 1 (T), 2(F), 3(T), 4(T), 5(F), 6(T)**]**

## Keywords

- **Job Costing:** Job costing is the form of specific order costing which applies where work is undertaken to customers' special requirements and each order is of comparatively of short

duration (compared with those to which contract costing applies). The work is usually carried out within a factory or workshop and moved through processes and operations as a continuously identifiable unit.

- **Batch Costing:** Batch Costing is the form of specific order costing which applies where similar articles are manufactured in batches either for sale or for use within the undertaking**"**.
- **Direct Materials:** Materials which can be directly associated with a particular job are known as direct material.
- **Direct Labour:** Labour time which is directly related with a particular product or job is known as direct labour.
- **Overheads:** All indirect expenses incurred on a job are called as overheads.

## Summary

- Job refers to a customized work order received from customers as per their need and requirement. A job is a cost unit which consists of a single order. For example**;** tailor made garments are made according to the choice and size of the individual customer.
- A separate job cost sheet is prepared for each job including all expenses incurred in the completion of a job for ascertainment of cost of job.
- For preparing job cost sheet, a unique job number is allotted to each job so that separate jobs are identifiable at all stages of production.
- A batch refers to the bunch of identical items of products or components.
- Costing method used for a batch is called as batch costing which is very similar to job costing. Whenever, a particular product is required, one unit of such product is not manufactured but a lot of say 500 or 1000 units of such product are produced. It is therefore also known as "Lot Costing".
- Inventory control principle of calculating the Economic Order Quantity (EOQ) will be used to compute Economic Batch Quantity (EBQ).

## Exercise Questions

### Short Answer Questions

1. What is job costing?
2. Explain the objectives of job costing.
3. Mention any two industries where job costing can be applied.
4. What is the use of 'Wage Abstract'?
5. Explain the concept of batch costing.
6. What is Economic Batch Quantity?
7. Differentiate job costing and batch costing.
8. Mention the advantages of using job costing.
9. Highlight the disadvantages of using job costing method.

## Long Answer Questions

1. Job order costing method is a specific costing method – Explain.
2. What do you mean by job order costing system? Identify the suitable industries in which it can be implemented.
3. What is job costing ? Enumerate the objectives, features, advantages and disadvantages of job order costing system.
4. Explain the complete procedure of job costing with the help of are relevant example.
5. Explain the utility of preparing material and labour abstract in determining the cost of ajob.
6. Explain Batch costing. How is it different from job costing? Also, identify the manufacturing activities where it can be applied.

## Numerical Questions

1. Kaya manufacturers provided following information regarding Job No. 450. Calculate the total cost of Job No. 450

| **Particulars** | **Amount (Rs.)** |
|---|---|
| Direct Materials | 5,000 |
| Direct Wages | 2000 |
| Chargeable Expenses | 1000 |

Factory overheads are 55% on prime cost, and office overhead is 20% on works cost.

**[Ans:** Total cost is Rs. 14,880**]**

2. The following information has been collected from the costing records of Alpha Manufacturing Company regarding job no. 768

Materials costing Rs. 8,020

| **Wages:** |
|---|
| Deptt. A 120 hours @ Rs. 3 per hour |
| Deptt B 80 hours @ Rs. 2 per hour |
| Deptt C 20 hours @ Rs. 5 per hour |
| **Overheads:** |
| **Variable overheads:** |
| Deptt. A Rs. 7,000 for 7000 labour hours |
| Deptt. B Rs. 5,000 for 2,500 labour hours |
| Deptt. C Rs. 4,000 for 1,000 labour hours |

| **Fixed Overheads:** |
|---|
| Estimated at Rs. 2,000 for 10,000 normal working hours. |

You are required to calculate the cost of Job No. 768 and calculate the price to give profit of 25% on selling price.

**[Ans:** Total Cost is Rs. 9,044, Profit Rs. 3,015, Selling Price Rs. 12,059**]**

3. Gamma engineering works estimated materials costs of Job No. 250 is Rs. 10,000 and direct labour cost is likely to be Rs. 2,000.

On this job, two machines are engaged. Machine No. 1 will be operated for 25 hours and Machine No. 2 for 9 hours. Machine hour rates for Machine No. 1 and Machine No. 2 are Rs. 16 and Rs. 20 respectively. The direct wages in all other shops last year amounted to Rs. 1,60,000 as against Rs. 96,000 factory overheads. Last year, factory cost of all jobs amounted to Rs. 5,00,000 as against 75,000 office expenses. Prepare a quotation which guarantees 20% profit on selling price.

**[Ans:** Total Cost is Rs. 15,847 Profit Rs. 3,962, Selling Price Rs. 19,810**]**

4. The Jain & company provided information regarding following costs for the 2014:

| **Details** | **Amount (Rs.)** |
|---|---|
| Material Consumed | 3,50,000 |
| Direct Labour | 3,00,000 |
| Actual Overheads | 3,50,000 |
| Work-in-Progress (closing) | 1,90,000 |

Calculate (a) Overheads for year would be apportioned on the basis of direct labour and (b) the other components of work-in-process if materials are 30% of total cost.

**[Ans:** (a) Overhead rate 1.17 (b) Components of WIP: Materials 57,000, Labour 61,290, Overheads 71,710**]**

5. Ajanta printing press wants to compute the cost of Job No.409 on the basis of following information obtained from its books for the year ended on 31 December 2014:

| **Details** | **Amount (Rs.)** |
|---|---|
| Materials consumed | 1,90,000 |
| Direct labour | 1,75,000 |
| Sales and Distribution Overheads | 1,52,500 |
| Administrative Overheads | 1,42,000 |
| Work Overheads | 1,45,000 |
| Profit | 1,00,900 |

I. A job cost sheet containing the Prime Cost, Works Cost, Production Cost, Cost of Sales and the Sales Price using above information.

II. Next year in 2015, the Ajanta printing press received various job orders. On the basis of last year records it is estimated that direct materials required will be Rs. 2,20,000 and direct labour will cost Rs. 1,75,000. Calculate sales value of these jobs if press aims to earn the same rate of profit on sales. It has also been assumed that the selling and distribution overheads have increased by 15%? Works overheads will be recovered as a percentage of direct labour and administration and selling and distribution overheads as a percentage of works cost, based on cost rates prevailing in the previous year.

**[Ans:**(i) Sales price Rs. 8,17,400 (ii) Sales price Rs. 11,34,153**]**

6. A customer has asked for price quotations from PCS Manufacturing Company regarding manufacturing of two customized machines. The following data regarding cost estimates for each machine has been provided.

| **Material** | **Machine 1 (Rs.)** | | **Machine 2 (Rs.)** | |
|---|---|---|---|---|
| Materials required | 45,000 | | 65, 000 | |
| Parts to be purchased | 12,500 | | 17,500 | |
| | **Number of Hours** | | **Hourly Rates (Rs.)** | |
| **Labour and overhead** | **Machine 1** | **Machine 2** | **Labour** | **Overhead** |
| Department A | 13 | 14 | 12.5 | 12.5 |
| Department B | 15 | 25 | 12.7 | 12.2 |
| Department C | 10 | 18 | 12.35 | 11.75 |
| Department D | 60 | 100 | 10.20 | 10.90 |
| Department E | 0 | 20 | 11.1 | 9.90 |

Selling and administrative expenses and profit is permitted upto 20%, based on sales. Estimated spoilage is 8% of direct labour and materials cost. Calculate the estimated Bid Price for each machine.

**[Ans:** Quoted price: Machine 1-Rs. 85,852.2 Machine 2-Rs. 1,24,257.12**]**

7. A computer Hardware Company manufactures a number of computer components. As per demand components are manufactured in batches, batch sizes vary from component to component. Each item of component requires a separate machine set up. Once the set up is done, the manufacturing time per unit of the component remains constant.

The company estimates component motherboard has a demand of 40,000 units per annum. Manufacturing of motherboard will take direct labour of 20 hours in setting- up. Cost of direct labour is 50 Rs. per hour. Overhead cost is Rs. 30 per machine hour for set-up and Rs. 60 per machine hour while on production. Material required per component will cost Rs. 200. Time taken to manufacture a unit is 12 minutes, during which time direct labour personnel tends to the machine. Cost of carrying one component over a year is Rs. 8. Present company policy is to execute four production runs in a year. The company has been advised to use Economic Batch Quantity model to regulate the production runs for this component. Calculate the cost per component under the two methods namely (i) four production runs in a year and (ii) Economic Batch Quantity (EBQ) method.

**[Ans:** (i) Rs. 222.80 (ii) Rs. 223.16]

# UNIT - 3

## CONTRACT COSTING

| Unit Code-3 | UNIT TITLE: CONTRACT COSTING | | | |
|---|---|---|---|---|
| **Location:** Class Room | **Session-1: Basics of Contract Costing** | | | |
| | **Learning Outcome** | **Knowledge Evaluation** | **Performance Evaluation** | **Teaching & Training Method** |
| | 1. Concept of Contract Costing. | 1. Describe the importance of Contract Costing. | 1. Identify various Jobs using Contract Costing. | **Interactive Lecture:** Discussing the concept and use of Contract Costing. |
| | 2. Applicability of Contract Costing. | 2. Discuss jobs where contract costing is applicable. | 2. Specify stages of Contract Costing. | **Interactive Lecture:** Describe jobs and stages of Contract Costing. |
| | 3.Features of Contract Costing. | 3.Discuss application of contract costing on jobs. | 3. Discuss the features and application of Contract Costing. | **Activity:** Visit any one job where contract costing is applied to understand its applicability. |
| | **Session-2: Specific Aspects of Contract Costing** | | | |
| | 1. Identify specific aspects of Contract Costing. | 1. Define different items of direct cost. | 1. Identify the treatment of various direct expenses. | **Interactive Lecture:** Acquaint with the expenses attributable to contract costing. |
| | 2. Explain different aspects of Cost plus Contract. | 2. Define different aspects of cost plus contracts. | 2. Discuss the treatment of cost plus contract and work in progress in the books of accounts. | **Interactive Lecture:** Familiarize with different aspects of contract plus costing. |
| | 3. Define Work certified and not certified. | 3. Explain the difference between work certified and work not certified. | 3. Identify the accounting treatment for work certified and not certified. | **Activity:** Visit the construction firm and learn about the various elements of costs. |

| Session-3: Treatment of Profits or Loss on Contracts Account | | | | |
|---|---|---|---|---|
| | 1. Computation of profit on incomplete contracts. | 1. Explain the treatment of profit on contracts that are at different stages of completion. | 1. Describe the stages of completion of contract in order to determine the profit to be taken to the reserve account. | **Interactive Lecture:** Discuss the accounting treatment of incomplete contracts. |
| | 2. Computation of profit on completed contracts. | 2. Discuss accounting treatment for completed contracts. | 2. Enumerate various kinds of costs that are to be deducted to arrive at profit/loss. | **Activity:** Prepare a contract account for a construction company. |

## Learning Objectives

After reading this unit, the student will be able to :

- understand the meaning of contract costing;
- get familiar with specific aspects of contract costing ;
- compute cost and profit from the contract;
- learn the treatment of profit on incomplete contracts; and
- explain the meaning of certain key terms.

## Session-1: Introduction To Contract Costing

Contract is a special form of job costing also known as terminal costing. The only difference between job costing is the size of the job. When the size of the job is big, which require considerable time to complete and comprising of activities to be done outside the factory area, the system of contract costing is employed. In this method of costing each contract is a cost unit and an account is opened for each contract in the books of contractor in order to ascertain profits. The system is very common with constructional engineers, ship builders etc. who undertake definite contracts. The contract price is the price agreed to be paid by the contractee to contractor. For each contract a separate account is opened in the general ledger or the contract ledger, which are maintained if there are large number of contracts. The contract account is debited with all the direct and indirect expenditure in relation to the contract account and credited with the amount of contract price on the completion of the contract. The balance represents profit or loss made on the contract and is transferred to the Profit and Loss account.

### Jobs Where Contract Costing is Used:

- Building construction
- Road construction
- Bridge construction

- Ship building and
- Other civil engineering works.

## Features of Contract Costing

The following are the features of contract costing :

1. The size of the job is generally large.
2. A contract usually takes more than one year to complete.
3. The work on the contract is carried out at the site of the contract.
4. Each contract is considered to represent a cost unit.
5. A separate contract account is prepared in the books of the contractor for each contract.
6. Material is specifically purchased for the contract.
7. Labour and other expenses are direct in nature.
8. Plant and equipment may be purchased or hired for the contract.
9. Payments to the contractor by the contractee are made at various stages of completion.

## Knowledge Assessment - I

**Fill in the blanks with appropriate words**

1. Contract is a special form of job costing also known as_____.
2. The _____ is the price agreed to be paid by the contractee to contractor.
3. For each contract a separate account is opened in the _____ or the contract ledger, which are maintained if there are large number of contracts.
4. Profit or loss made on the contract and is transferred to the _____.
5. Payments to the contractor by the _____ are made at various stages of completion.

**[Ans:** 1- Terminal costing, 2- Contract price, 3- General ledger, 4- Profit and Loss account, 5-Contractee**]**

# Session-2: Specific Aspects of Contract Costing

## Materials

When materials is specially purchased for the contract, the contract account will be debited and suppliers or cash account will be credited with the value of materials purchased. In case the materials have been issued from stores, the relevant contract account will be debited and stores account in the General Ledger will be credited with the amount of materials issued. In case certain materials charged to contract are returned to stores, stores control account will be debited and contract account will be credited. The sale proceeds of surplus material at the contract site should be credited to the concerned contract account.

## Labour

All labour engaged at site and the salaries and wages paid to the labour are treated as direct cost and debited to contract account. The salary of supervisory staff will also be considered as a direct charge against a contract if they have rendered whole time attention to it. Wages of the workers which cannot be identified with a particular contract or salary of the supervisory staff looking over two or more contracts will be considered as indirect expenses and apportioned over the contracts on reasonable basis.

## Direct Expenses

All direct expenses (electricity, insurance, telephone, postage, sub-contracts, architect's fees, etc.) are treated as direct cost and debited to contract account.

## Overhead Cost

In the case of contract costing, overhead constitute an insignificant part of the total cost of contract account. Such cost may be apportioned on suitable basis and debited to the contract account.

## Plant & Machinery

The plant used on a contract can be dealt within the contract accounts in any of the following ways:

(a) Where a plant is specifically purchased for a particular contract the contract account should be debited with the cost of the plant. On completion of the contract, the depreciated value will be credited to the contract account or the contract account can also be debited with the amount of depreciation calculated. On the completion of the contract if the plant is sold then sale proceeds are credited to the contract account.

(b) If a plant is used for a contract for a short period, then the contract account should be debited with the usual depreciation of the plant (there is no need of debiting the cost of the plant to the contract account).

## Cost plus Contracts

In certain contracts the contractee agrees to pay to the contractor the cost price of the work done on the contract plus an agreed percentage thereof by way of overhead expenses and profit. Such contracts are known as cost-plus contracts.The system of cost plus contract costing is employed in case where it is very difficult for the contractor to quote the contract price because there is no precedent which may be taken as the basis.

## Sub-Contractor

The contractor may entrust certain portion of work under the contract to a sub-contractor such work is usually specialised in nature and a direct charge (eg. special flooring, steel works etc.) assigned by the contractor to the sub–contractor who is responsible to the main contractor for the work assigned to him.This is debited to the contract account.

## Work-in-Progress

In the case of the small contracts the contractee pays the contract price on the completion of the

contract. In case of large contracts *Progress Payment* is adopted.The contractee agrees to pay part of the contract price from time to time depending upon the satisfactory progress of the work. The work shall be judged by contractee's architect, surveyor or engineer who will issue certificate stating the value of work done so far and approved by him such work is known as work certified. The contractee usually pays 75% or 80% of the value of work certified depending upon the terms of the contract. The balance not paid is known as *Retention Money*.

The value of the **work certified** and consequent payment is dealt in any of the two ways:

(a) The value of work certified is debited to the contractee's personal account and credited to the contract account on the receipt of money the contractee, his personal account is credited and cash or bank account is debited . For example the value of work certified is Rs.50,000 and contractee has paid 80% in cash the following journal entry shall be passed.

| | | | |
|---|---|---|---|
| Contractee's A/c | | Dr. | Rs. 50,000 |
| To Contract A/c | | | Rs. 50,000 |
| (Being the value of work certified) | | | |
| Bank A/c | | Dr. | Rs. 40,000 |
| To Contractee's A/c | | | Rs. 40,000 |
| (Being the amount of cash received) | | | |

In the balance sheet the contractee's account is shown on the asset side. It to be carefully observed that the value of work certified should not include Rs. 50,000 as the entry for the same has already been passed.

(b) The cash received from the contractee is credited to his personal account. The value of work is debited work in progress account and credited to the contract account. The work in progress is shown as an asset in the balance sheet after deducting the amount received from the contractee.In the beginning of the next year the work in progress is transferred to debit side of contract account. On completion of the contract the contractee's personal account is debited and contract account is credited.

| | | | |
|---|---|---|---|
| Work in progress A/c | | Dr. | Rs. 50,000 |
| To Contract A/c | | | Rs. 50,000 |
| (Being the value of work certified) | | | |
| Bank A/c | | Dr. | Rs. 40,000 |
| To Contractee's A/c | | | Rs. 40,000 |
| (Being cash received from the contractee) | | | |

In the Balance Sheet the items will appear as follows:

**Balance Sheet as on**

| **Assets** | | **Amount(Rs.)** |
|---|---|---|
| Work in Progress(Contract No.——) | 50,000 | |
| Less: Amount received from the contractee | 40,000 | 10,000 |

## Work Uncertified

If the progress of a work is unsatisfactory or the work has not reached the specified stage, though certain work is completed, such work does not qualify for a certificate by the Contractee's Architect or Surveyor is termed as "Work Uncertified." It is valued at cost and credited to Contract Account and debited to Work-in-Progress Account which will be transferred to the debit of the contract account at the beginning of the next year.

The value of work in progress can be ascertained as under:

| | |
|---|---|
| Cost of work certified | x |
| **Add:** Cost of work uncertified | x |
| Cost of work to date | x |
| **Add:** Profit taken to P&L A/c | x |

It is to be observed that profit made on contract in progress is the excess of the value of work certified over its cost. A part of such profit is kept as reserve while the other is taken to Profit and Loss A/c.

The Work in Progress Account will appear as follows in the balance sheet.

**Balance Sheet as on ————————**

| **Assets** | | **Amount(Rs.)** |
|---|---|---|
| Work in-Progress | | |
| Value of work certified | x | |
| **Add:** cost of work uncertified | x | |
| | **xx** | |
| **Less:** Amount received from contractee | x | |
| | x | |
| **Less:** Reserves for unrealized profit | **xx** | **xxx** |

## Knowledge Assessment - II

**State whether the following statements are (T) or (F)**

1. The contract account is credited with materials purchased for the contract.
2. If the progress of a work is unsatisfactory or the work has not reached the specified stage, though certain work is completed, such work does not qualify for a certificate by the Contractee's Architect or Surveyor.
3. In the balance sheet the contractee's account is shown on the liabilities side.
4. Profit made on contract in progress is the excess of the value of work certified over its cost.
5. The work shall be judged by contractee's architect, surveyor or engineer who will issue certificate stating the value of work done so far and approved by him such work is known as work certified.

6. The balance of money not paid by contractee is known as Retention Money.
7. In cost-plus contracts contractee agrees to pay to the contractor the cost price of the work done on the contract.
8. Overhead cost may be apportioned on suitable basis and credited to the contract account.

**[Ans:** 1-F, 2-T, 3-F, 4-T, 5-T, 6-T, 7-F, 8-F **]**

## Session-3: Treatment of Profits or Loss on Contracts Account

The accounting treatment of profits or loss of contracts in the following stages :

### (A) Profit or Loss on incomplete contracts

At the end of the accounting period there would be certain completed contracts and while others are still in process and will be completed in the coming years. The total profit made on completed contracts may be taken safely to the Credit of Profit and Loss Account. But in case of the contracts in process there is possibility of profits being turned into losses due to rise in the prices of material and labour and losses on account of unforeseen contingencies. Hence, it is important to consider profit on in completed contracts after providing for the unknown contingencies.

In the case of incomplete contracts, the following rules may be followed :

(i) Profit should be considered in respect of work certified only, work uncertified should always be valued at cost.

(ii) Completion of Contract is Less than 25% : In this case no profit should be taken to Profit and Loss Account.

(iii) Completion of Contract is upto 25% or more but Less than 50% : In this case one-third of the notional profit, reduced in the ratio of cash received to work certified, should be transferred to Profit and Loss Account. The balance should be allowed to remain as reserve. It can be expressed as :

$$\frac{1}{3} \times \text{Notional Profit} \times \frac{\text{Cash Received}}{\text{Work Certified}}$$

(iv) Completion of Contract is upto 50% or more : In this case two-third of the notional profit reduced by proportion of cash received to work certified is transferred to Profit and Loss Account. The equation is:

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

(v) Completion of Contract is upto 90% or more than 90%, i.e., it is nearing completion: In this case the profit to be taken to Profit and Loss Account is determined by deducting total estimated cost from the contract price.

$$\text{Estimated Profit} \times \frac{\text{Work Certified}}{\text{Contract Price}}$$

(vi) The whole of loss if any, should be transferred to Profit and Loss Account.

(vii) As per Accounting Standard (*Revised*): While accounting for construction contracts a foreseeable loss on the entire contract should be provided for in the financial statements. Hence, the profit earned is notional profit on the basis of work certified, and is reduced on the basis of cash received as the principle of conservatism is followed. The accounting entry for the transfer of profit to the profit and loss account and Work-in-Progress account for unrealised profit will be as under:

Contract A/c (with total profit) Dr.

To Profit and Loss A/c (with profit transferred)

To Work-in-Progress A/c (with profit kept as reserve)

## (B) Profit or loss on completed contracts

When the contract is complete, the contractee's account is debited and contract account is credited with the contract price. As there is no work in progress the entire profit or loss is transferred to profit and loss account. The balance of retention money in respect of work certified earlier is also received. Thus the contractee's account and contract account all stand closed.

## Knowledge Assessment - III

**Fill the blanks with the appropriate answers**

1. The total profit made on completed contracts may be taken safely to the _____ of Profit and Loss Account.
2. When the contract is complete, the _____ account is debited and contract account is credited with the contract price.
3. In the case the contract is nearing completion the profit to be taken to _____is determined by deducting total estimated cost from the contract price.
4. Profit should be considered in respect of work certified only, _____ should always be valued at cost.
5. It is important to consider profit on in completed contracts after providing for the _____.
6. When the contract is complete, the contractee's account is _____ and contract account is credited with the contract price.

**[Ans:** 1. Credit 2.contractee's 3.Profit and Loss Account 4. work uncertified 5. unknown contingencies 6. debited**]**

**Illustration 1: The following was the expenditure on a contract for Rs. 6,00,000**

| Particulars | Amount |
|---|---|
| Material | 1,20,000 |
| Wages | 1,64,000 |
| Plant | 20,000 |
| Overheads | 8,600 |

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

**Solution**:

**Dr.** **Contract Account** **Cr.**

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

**Illustration 2:** XY Ltd undertook a contract, the following was the expenditure on a contract for Rs. 3,00,000.

| | |
|---|---|
| Material issued to contract | Rs. 51,000 |
| Plant issued for contract | Rs. 15,000 |
| Wages | Rs. 81,000 |
| Other expenses | Rs. 5,000 |

Cash received on account of contract up to 31st March, 2014 amounted to Rs. 1,28,000 being 80% of work certified. Of the plant and material charged to the contract plant costing Rs. 1,500 and material costing Rs. 2,000 were lost. On 1st March 2014, plant which cost Rs. 1,000 was returned to the store, the cost of work done but not certified was Rs. 1,500 and material costing Rs. 1,250 were in hand on site. Provide 10% depreciation on plant, reserve 1/3 of profit received and prepare contract account from the above particulars.

Solution:

**Dr.** **Contract Account** **Cr.**

| Particulars | Amount (Rs.) | Particulars | | Amount (Rs.) |
|---|---|---|---|---|
| To Materials | 51,000 | By Work-in-Progress A/c | | |
| To Plant | 15,000 | Work certified | | |
| To Wages | 81,000 | (1,28,000×100/80) | 1,60,000 | |
| To Other Expenses | 5,000 | Work uncertified | 1,500 | 1,58,500 |
| To Notional Profit c/d | 23,400 | By Profit & Loss A/c | | |
| (Balancing Figure) | | Plant lost | 1,500 | |
| | | Material lost | 2,000 | 3,500 |
| | | By Plant returned | 1,000 | |
| | | Less depreciation | 100 | 900 |
| | | By Material in hand | 1,250 | |
| | | By Plant at site | | |
| | | (15,000-1,500-1,000) | 12,500 | |
| | | Less depreciation | 1,250 | 11,250 |
| | **1,75,400** | | | **1,75,400** |
| To Profit & Loss A/c (23,400×2/3×80/100) | 12,480 | By Notional Profit b/d | | 23,400 |
| To Work In Progress (Reserve) A/c | 10,920 | | | |
| | **23,400** | | | **23,400** |

**Illustration 3:** Mr. A has undertaken several contract works. He maintains a separate record for each contract.From the records for the year ending 31-12-14, prepare contract account for Contract No.50 and find the amount transferred to profit and loss account.

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

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

**Solution:**

**Dr.** **Contract Account** **Cr.**

| Particulars | | Amount (Rs.) | Particulars | Amount (Rs.) |
|---|---|---|---|---|
| To Materials | | | By Material at site | 8,000 |
| Direct purchase | 90,000 | | By Machinery on hand | 72,000 |
| Issued from stores | 25,000 | 1,15,000 | (80,000-8,000) | |
| To Wages | | 1,22,000 | By Work-in-Progress A/c | |
| To Direct expenses | | 12,000 | Work Certified | 3,75,000 |
| To Machinery purchased | | 80,000 | | |
| To Establishment charges | | 27,000 | | |
| To Notional Profit c/d | | 99,000 | | |
| | | **4,55,000** | | **4,55,000** |
| To Profit & Loss A/c (99,000×2/3×80/100) | | 52,800 | By Notional Profit b/d | |
| To Work-in-Progress A/c | | 46,200 | | 99,000 |
| | | **99,000** | | **99,000** |

**Illustration 4:** The following is the condensed record of the transactions as on 31st December 2014 relating to special contract completed during the year.

| | |
|---|---|
| Materials bought from market | Rs. 1,500 |
| Materials issued from the stores | Rs. 500 |
| Wages | Rs. 2,440 |
| Direct expenses | Rs. 294 |
| Works on cost 25% of direct wages | |
| Office on cost 10% of prime cost | |
| Contract price | Rs. 6,000 |

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

**Solution:**

**Dr.** **Contract Account** **Cr.**

| Particulars | Amount (Rs.) | Particulars | Amount (Rs.) |
|---|---|---|---|
| To Materials | | By Material Returned | 240 |
| Purchased 1,500 | | By Contractee's Account | 6,000 |
| Issued from store 500 | 2,000 | | |
| To Wages | 2,440 | | |
| To Direct Expenses | 294 | | |
| To Work on Cost (2,440×25/100) | 610 | | |
| To Office on cost (10% of Rs. 4,494) | 450 | | |
| To Profit and Loss A/c | 446 | | |
| | 6,240 | | 6,240 |

**Note:**

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

**Illustration 5:** A construction company has undertaken to construct a bridge.The following detail relate to this contract for the year ending 31st December 2014.

| Particulars | Rs. | Particulars | Rs. |
|---|---|---|---|
| Materials | | General plant in use: | |
| Direct purchases Rs. 50,000 | | Written down value 1,00,000 | |
| Issued from store Rs. 10,000 | 60,000 | Depreciation there on (10,000) | 90,000 |
| Wages for labour | 45,000 | Direct expenses | 3,500 |
| Share of overhead | 2,000 | Materials on hand | 1,000 |
| Material lost by fire | 500 | Salvage value of material lost | 150 |
| Wages accrued due | 5,000 | Value of work certified | 1,59,000 |
| Direct expenses accrued due | 500 | Cost of work uncertified | 4,500 |

The value of the contract is Rs.2,15,000 and it is the practice of the contractee to retain 10% of the work certified. From the above prepare a contract account .

**Solution:**

**Contract Account**

**Dr.** **for the year ending 31st December 2014** **Cr.**

| Particulars | Amount (Rs.) | Particulars | Amount (Rs.) |
|---|---|---|---|
| To Materials | | By Work-in-Progress | |
| Direct purchases 50,000 | | Value of work certified 1,59,000 | |
| Issued from store 10,000 | 60,000 | Cost of work uncertified 4,500 | 1,63,500 |
| To Wages for labour 45,000 | | | |
| To Wages accrued due 5,000 | 50,000 | By Materials on hand | 1,000 |
| To Direct expenses 3,500 | | By Plant on hand at the end | 90,000 |
| To Direct expenses accrued 500 | 4,000 | (1,00,00-10,000) | |
| To Share of overhead | 2,000 | By Costing Profit & Loss A/c | 500 |
| To General plant in use | 1,00,000 | (Material lost by fire) | |
| To Notional Profit c/d | 39,000 | | |
| | **2,55,000** | | **2,55,000** |
| To Profit credited to P&L A/c | | Notional Profit c/d | 39,000 |
| (39,000×2/3×90/100) | 23,400 | | |
| To Work in Progress (Reserve) | 15,600 | | |
| | **39,000** | | **39,000** |

**Illustration 6:**

(a) Given: Notional Profit Rs.79,000; Cash Received Rs.3,30,000; Work Certified Rs.4,00,000; Contract Price Rs.6,00,000. Calculate profit that can be credited to the P&L A/c.

(b) How much profit if any you would allow to be considered in the following case? Contract Cost Rs. 5,60,000; Contract Value Rs. 10,00,000; Cash Received Rs. 5,40,000; Uncertified Work Rs. 60,000. Deduction from bills by way of security deposit 10%.

(c) The following is the information relating to contract account 123:

Contract price Rs. 6,00,000; Wages Rs. 1,64,000; General Expenses Rs. 8,600; Raw Material Rs. 1,20,000; Plant Rs. 20,000.

As on date, cash received was Rs. 2,40,000 being 80% of the work certified. The value of materials remaining at site was Rs. 10,000. Depreciate plant by 10%. Prepare Contract A/c.

**Solution:**

(a) Profit to be credited to P&L A/c

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

$= 79{,}000 \times \frac{3{,}30{,}000}{4{,}00{,}000} \times \frac{2}{3}$

= Rs. 43,450

(b) Retention money in the form of security deposit is 10% n, i.e. cash received is 90% of work certified.

Value of work certified $= \frac{5{,}40{,}000 \times 100}{90} = 6{,}00{,}000$

Less: Cost of Work Certified :

| | | |
|---|---|---|
| Cost of contract till date | 5,60,000 | |
| Cost of work uncertified | 60,000 | 5,00,000 |
| Notional Profit | | 1,00,000 |

Profit to be credited to P&L A/c $= \text{National Profit} \times \frac{\text{Cash Received}}{\text{Work Certified}} \times \frac{2}{3}$

$1{,}00{,}000 \times \frac{5{,}40{,}000}{6{,}00{,}000} \times \frac{2}{3}$

=Rs. 60,000

(c)

**Dr.** **Contract Account** **Cr.**

| Particulars | Amount (Rs.) | Particulars | Amount (Rs.) |
|---|---|---|---|
| To Material | 1,20,000 | Work certified | 3,00,000 |
| To Wages | 1,64,000 | (2,40,000×100/80) | |
| To General expenses | 8,600 | Material at site at the end | 10,000 |
| To Plant | 20,000 | Plant on site at the end | 18,000 |
| To Notional Profit c/d | 15,400 | (20,000-2,000) | |
| | **3,28,000** | | **3,28,000** |
| To Profit & Loss A/c(15,400×2/3×80/100) | 8,213 | Notional Profit c/d | 15,400 |
| To Work-in-Progress A/c | 7,187 | | |
| | **15,400** | | **15,400** |

**Illustration 7:** Engineers limited undertook several contracts during the year 2015.The following information pertains to contract no 107:

| Particulars | Amount(Rs.) | Amount(Rs.) |
|---|---|---|
| Direct materials | | 20,250 |
| Direct wages | | 15,500 |
| Stores issued | | 10,500 |
| Loose tools | | 2,400 |
| Tractor expenses :Running material | 2,300 | |
| Wages of driver | 3,000 | 5,300 |
| Other direct charges | | 2,650 |

The contract took 13 weeks on its completion. The value of loose tools and stores returned at the end of the period were Rs. 200 and Rs. 3, 000 respectively. The plant was also returned at a value of Rs. 16,000 after charging a depreciation of 20%. The value of tractor was Rs. 20,000. The office and administration expenses are to be provided at 10% on works cost. Profit to be charged at the rate of 20% of the total cost.

**Solution :**

**Dr.** **Contract Account** **Cr.**

| Particulars | Amount (Rs.) | Particulars | Amount (Rs.) |
|---|---|---|---|
| To Direct materials | 20,250 | By loose tools returned | 200 |
| To Direct wages | 15,500 | By stores returned | 3,000 |
| To Stores issued | 10,500 | By Contractee's A/c | 76,758 |
| To Loose tools | 2,400 | | |
| To Tractor (2,300+3,000) | 5,300 | | |
| To Depreciation on tractor | 750 | | |
| To Depreciation on Plant (20,000-16,000) | 4,000 | | |
| To Other direct charges | 2,650 | | |
| To Administrative and office expenses(10% of works cost) | 5,815 | | |
| To Profit and Loss A/c (20% of total cost) | 12,793 | | |
| | **79,958** | | **79,958** |

**Working Note :**

| | | |
|---|---|---|
| Works cost | = | (Rs. 20,250+15,500+10,500+2,400+5,300+750 +4,000+2,650-3,000- 200) |
| Works cost | = | Rs. 58,150 |
| Total cost | = | Rs. 58,150+5,815 |
| Total cost | = | Rs. 63,965 |
| Depreciation on tractor | = | 15% of Rs. 20,000 |
| Depreciation on tractor | = | Rs. 3,000 |
| (¼ of Rs.3,000) | = | Rs. 750 |

**Illustration 8:** A company undertook a contract for total value of Rs. 24,00,000. Prepare a contract account for the year ending 31st March 2014 from the following particulars:

| **Particulars** | **Amount (Rs.)** |
|---|---|
| Wages | 6,00,000 |
| Plant | 2,00,000 |
| Materials | 3,00,000 |
| Overhead | 1,20,000 |
| Depreciation @10% to be provided on plant | |
| Materials lying on site on 31stMarch 2014 | 40,000 |

Work certified was to the extent of Rs. 16,00,000 and 80% of the same was received in cash.

5% of the value of materials issued and 6% of the wages may be taken to have been incurred for the portion of the work completed but not yet certified. Overheads are charged as a percentage of direct wages.Ignore depreciation on the plant for use of uncertified portion of the work. As certain notional profit and amount to be transferred to Profit and Loss A/c. Show workings clearly.

**Solution**

**Dr.** **Contract Account** **Cr.**

| **Particulars** | **Amount (Rs.)** | **Particulars** | | **Amount (Rs.)** |
|---|---|---|---|---|
| To Materials | 3,00,000 | By Work-in-Progress | | |
| To Wages | 6,00,000 | Work certified | 16,00,000 | |
| To Overhead(20% of wages) | 1,20,000 | Work uncertified | 58,200 | 16,58,200 |
| To Plant | 2,00,000 | By Plant at site | | 1,80,000 |
| To Notional Profit | 6,58,200 | By Material at site | | 40,000 |
| | **18,78,200** | | | **18,78,200** |

| | | | |
|---|---|---|---|
| To Profit and Loss A/c (6,58,200×2/3×4/5) | 3,51,040 | By Notional Profit b/d | 6,58,200 |
| To Work-in-Progress (Reserve) | 3,07,160 | | |
| | **6,58,200** | | **6,58,200** |

| Calculation of Work Uncertified : | Rs. |
|---|---|
| Materials 5% of Rs.3,00,000 | 15,000 |
| Wages 6% of 6,00,000 | 36,000 |
| Overheads (20% of wages ) | 7,200 |
| | 58,200 |

**Illustration 9 :** A company undertook a contract for a total value of Rs. 24,00,000. Prepare a contract account for the year ending 31st March 2014 from the following particulars:

| Particular s | Amount (Rs.) |
|---|---|
| Wages | 6,00,000 |
| Plant | 2,00,000 |
| Materials | 3,00,000 |
| Overheads | 1,20,000 |
| Depreciation to be provided @10% on plant . | |
| Materials lying at the site on 31st March 2014 | 40,000 |

- Work certified was to the extent of Rs. 16,00,000 and 80% of the same was received in cash.
- 5% of the value of materials issued and 6% of the wages may be taken to have been incurred for the portion of the work completed but not certified.
- Overheads are charged as percentage of direct wages.
- Ignore depreciation on plant for use on uncertified portion of the work.
- Ascertain notional profit and the amount to be transferred to Profit and Loss A/c
- Show workings clearly.

**Solution:**

**Dr. Contract Account Cr.**

| Particulars | Amount (Rs.) | Particulars | | Amount (Rs.) |
|---|---|---|---|---|
| To Materials | 3,00,000 | By Work-in-Progress | | |
| To Wages | 6,00,000 | Work certified | 16,00,000 | |
| To Overheads | 1,20,000 | Work uncertified | 58,200 | 16,58,200 |
| To Plant | 2,00,000 | By Plant at site | | 1,80,000 |
| To Notional Profit c/d | 6,58,200 | By Material at site | | 40,000 |
| | **18,78,200** | | | **18,78,200** |
| To Profit and Loss A/c (Rs.6,58,200×2/3×4/5) | 3,51,040 | By Notional Profit b/d | | 6,58,200 |
| To Work-in-Progress (Reserve ) | 3,07,160 | | | |
| | **6,58,200** | | | **6,58,200** |

Calculation of work uncertified

| | |
|---|---|
| Materials 5% of Rs. 3,00,000 | 15,000 |
| Wages 6% of Rs. 6,00,000 | 36,000 |
| Overheads 20% of wages | 7,200 |
| | 58,200 |

## Keywords

- **Contract Costing:** That form of specific order costing which applies where work is undertaken as per customer's special requirement.
- **Cost plus Contract:** A contract where the contractee agrees to pay to the contractor the cost price for the work done on the contract plus an agreed percentage thereof by way of overhead cost and profit.
- **Escalation Clause:** A provision in a contract for adjustment of prices quoted and accepted, in the event of specified contingencies.
- **Work Certified:** Work approved by the contractee or his nominee on a specific date.
- **Work Uncertified:** Work which has not been so far approved by the contractee or his nominee.

## Summary

- Contract is a special form of job costing also known as terminal costing. In this method of costing each contract is a cost unit and an account is opened for each contract in the books of contractor in order to ascertain profits.
- Materials is specifically purchased for the contract and is direct cost. All labour engaged at site and the salaries and wages paid to the labour are treated as direct cost. All direct expenses (electricity, insurance, telephone, postage, sub-contracts, architect's fees, etc.) are treated as direct cost and debited to contract account.
- The contracts where the contractee agrees to pay to the contractor the cost price of the work done on the contract plus an agreed percentage are known as cost-plus contracts. The contractor may entrust certain portion of work under the contract to a sub-contractor which is usually specialised in nature.The work judged by contractee's architect, surveyor or engineer who issue certificate stating the value of work done and approve it by him is known as work certified.
- If the progress of a work is unsatisfactory or the work has not reached the specified stage, though certain work is completed, and does not qualify for a certificate by the Contractee's Architect or Surveyor is Work Uncertified.

## Exercise Questions

### Short Answer Question

1. What is contract costing
2. Explain the term work certified
3. Write short notes on:
   (a) Cost plus contract
   (b) Work certified
   (c) Work uncertified

### Long Answer Questions

1. Explain briefly the distinguishing features of contract costing.
2. Distinguish between Job Costing and Contract Costing.
3. Describe briefly the principles to be followed while taking credit for profit on incomplete contracts.
4. Write a short note on the escalation clause.
5. Write short notes on
   (i) Work certified
   (ii) Work not certified
   (iii) Cost plus contracts
   (iv) Escalation Clause
6. What is the relevance of escalation clause provided in the contracts.

7. Explain briefly the concept of Cost plus contracts.

## Numerical Questions

1. Surya constructions limited started business with paid up capital of Rs.50,00,000. On 1st April 2013, it undertook a contract to construct a building for Rs.60,00,000. Cash received on account of contract upto 31st March 2014 was Rs.18,00,000, being 90% of the work certified. Work uncertified as on 31st March 2014 was estimated to be Rs.1,00,000. As on 31st March 2014, the cost of materials at site was Rs.30,000 and outstanding wages Rs.5,000. Of the Plant and Machinery charged to the contract, Machinery costing Rs.2,00,000 was returned to stores on 31st March 2014. Plant and Machinery charged to the contract to be depreciated by 5%. The following were the ledger balances

(Debit Balances as per Trial balance as on 31st March 2014)

| **Particulars** | **Amount (Rs.)** |
|---|---|
| Land and Building | 23,00,000 |
| Plant and Machinery (60% at site) | 25,00,000 |
| Furniture | 60,00,000 |
| Materials | 14,00,000 |
| Fuel and Power | 1,25,000 |
| Site Expense | 5,000 |
| Office Expenses | 12,000 |
| Rates and Taxes | 15,000 |
| Cash at Bank | 133,000 |
| Wages | 2,50,000 |

Prepare contract account and Balance Sheet for the year ended 31st March.

(**Ans**:- Work certified Rs. 20,00,0000, P&L Ac Rs. 72,900, Reserve Rs. 1,70,100**)**

2. The contract account in the books of contractor limited appears as follows.

| **Particulars** | **Amount (Rs.)** |
|---|---|
| Material | 5,000 |
| Plant and Machinery | 12,500 |
| Labour | 4,600 |
| Indirect Labour | 640 |
| Overhead | 1,950 |

You are informed that it is the practice of the firm to take credit for 2/3 of the profits earned on the contract in progress after taking into account the value of work certified.

You are required to

a) prepare the contract account

b) Amount transferred to P&L

Value of work certified for payment is Rs. 10,000. Cost of work carried out but not certified is Rs. 3,800, The stock of material not used is Rs.950. The value of plant at site after depreciation is Rs. 11,875.

(**Ans**: Profit to P&L A/c Rs. 1,290**)**

3. The following is the information related to contract account 101.

Contract Price Rs. 6,00,000, Wages Rs. 1,64,000, General expenses Rs. 8,600, Raw Materials 1,20,000, Plant Rs. 20,0000. As on date cash received was Rs.2,40,000, being 80% of the work certified. The value of material remaining at site was Rs.10,000. Depreciate plant by 10%. Prepare the contract account.

(**Ans** : Work certified Rs. 3,00,000, P&L Ac 8,213, Reserve A/c 7,187**)**

4. ABC Limited has undertaken the construction of a bridge over river Yamuna for MCD. The value of contract is Rs. 12,50,000 subject to a retention of 20% until one year after the certified completion of the contract and final approval of corporations engineer. The following are the details shown in the books on 30th June 2014

| **Particulars** | **Amount (Rs.)** |
|---|---|
| Labour on site | 4,05,000 |
| Material – Direct on site less returns | 4,20,000 |
| Material from stores | 1,81,200 |
| Higher end use of plant | 12,100 |
| Direct expenses | 23,000 |
| General overheads allocated to contract | 37,100 |
| Material in hand on 30th June 2014 | 6,300 |
| Wages accrued on 30th June 2014 | 7,800 |
| Direct expenses accrued on 30th June 2014 | 1,600 |
| Work not yet certified at cost | 16,500 |
| Amount certified by corporation engineer | 11,00,000 |
| Cash received on account | 8,80,000 |

1) Prepare contract account.

2) Prepare Contractee account and

3) How relevant items would appear in the Balance sheet

(**Ans** :- P&L Ac Rs.72,000, Reserve Rs.63,000**)**

5. The following expenditure was incurred for the contract on construction of building of Rs.12,00,000 for the year ended 31st December 2014.

| **Particulars** | **Amount (Rs.)** |
|---|---|
| Material | 2,40,000 |
| Wages | 3,28,000 |
| Plant | 40,000 |
| Overheads | 17,200 |

Cash received on account of contract to 31st December 2014, Rs. 4,80,000 being 80% of the work certified. Value of material in hand was Rs.20,000. The plant had undergone 30% depreciation, prepare contract account.

(**Ans :-** P&L Rs. 14,293, Reserve 12,507**)**

6. Two contracts commenced on 1st January 2014 and 1st July 2014 respectively were undertaken by contractor and their accounts on 31st December 2014 showed the following position

| **Particulars** | **Contract 1 (Rs)** | **Contract 2 (Rs)** |
|---|---|---|
| Contract price | 4,00,000 | 2,70,000 |
| Material | 72,000 | 58,000 |
| Wages | 1,10,000 | 1,12,000 |
| General charges | 4,000 | 2,800 |
| Plant | 20,000 | 16,000 |
| Material | 4,000 | 4,000 |
| Wages accrued | 4,000 | 4,000 |
| Work certified | 2,00,000 | 1,60,000 |
| Cash received | 1,50,000 | 1,20,000 |
| Work done but not certified (at cost) | 6,000 | 8,000 |

The plant was installed on the date of commencement of each contract with 10% depreciation per annum. Prepare contract account.

(**Ans:** Contract 1 Total profit Rs. 18,000, profit taken to P&L Ac Rs. 9,000, Contract 2 Total loss Rs. 6,000**)**

7. The following particulars related to the contract account of Ajit Engineers,

| **Particulars** | **Amount (Rs.)** |
|---|---|
| Material | 85,349 |
| Wages | 74,375 |
| Plant | 15,000 |
| Direct expenses | 3,167 |
| Establishment charges | 4,126 |
| Material returned to stores | 549 |
| Work certified | 1,95,000 |
| Work uncertified | 4,500 |
| Material in hand at end of year | 1,883 |
| Wages accrued | 2,400 |
| Direct expenses accrued | 240 |
| Value of plant at end of the year | 11,000 |
| Contract price | 2,50,000 |
| Cash received | 1,80,000 |

You are required to prepare the contract account and contractee account.

(**Ans :** P&L Rs. 17,400, Reserve Rs. 10,875**)**

8. Mr. B undertook contract for 15,00,000 on a condition that 80% of the value of the work certified would be paid immediately and remaining 20% until the contract was completed. In 2013 the of expenses were

| **Particulars** | **Amount (Rs.)** |
|---|---|
| Material | 1,80,000 |
| Wages | 1,70,000 |
| Carriage | 6,000 |

| | |
|---|---|
| Cartage | 1,000 |
| Sundry expenses | 3,000 |

The work was certified for Rs.3,75,000 and 80% of it was paid as agreed. In year 2014, the expenditure were

| **Particulars** | **Amount (Rs.)** |
|---|---|
| Material | 2,20,000 |
| Wages | 2,30,000 |
| Carriage | 23,000 |
| Cartage | 2,000 |
| Sundry expenses | 4,000 |

3/4$^{th}$ of the contract was certified and 80% of this was paid accordingly. The value of closing stock and work in progress uncertified was 20,000.

In 2015 the expenditure were

| **Particulars** | **Amount (Rs.)** |
|---|---|
| Material | 1,26,000 |
| Wages | 17,000 |
| Cartage | 6,000 |
| Sundry expenses | 3,000 |

By 30$^{th}$ June 2015, the entire contract was completed. Show how the contract and contractee account would appear in the books of contractor. Assuming that balance due to him was received on completion of contract.

(**Ans :** 2013 Profit P&L Rs. 4,000; 2014 Profit P&L Rs. 1,61,067; 2015 Profit P&L Rs. 1,90,933**)**

# UNIT - 4

## PROCESS COSTING

| Unit Code-4 | UNIT TITLE: PROCESS COSTING | | | |
|---|---|---|---|---|
| **Location:** Class Room | **Session-1: Basics of Process Costing** | | | |
| | **Learning Outcome** | **Knowledge Evaluation** | **Performance Evaluation** | **Teaching & Training Method** |
| | 1. Concept of Process Costing. | 1. Describe the importance of Process Costing. | 1. Identify various industries using Process Costing. | **Interactive Lecture:** Discuss the concept and use of Process Costing. |
| | 2. Applicability of Process Costing. | 2. Understand the type of industries where process costing is applied. | 2. Specify various sorts of industries using process costing technique. | **Interactive Lecture:** Discuss the processing in industries where Process Costing is applied. |
| | 3.Difference between Job Costing and Process Costing. | 3.Enumerating the basic difference between Job and Process Costing. | 3.Identify the basis of difference between Job and Process Costing . | **Activity:** Visit any one Industrial unit using process costing to understand its applicability. |
| | **Session-2: Process Costing Procedure** | | | |
| | 1. Stages of process costing. | 1. Describe the sequence of the flow of raw material. | 1. Identify the various stages till completion of product. | **Interactive Lecture:** Acquaint with the stages of process costing. |
| | 2. Treatment for loss and wastages. | 2. Explain the meaning of normal loss and abnormal loss. | 2. Describe the treatment of normal and abnormal loss in the books of accounts. | **Interactive Lecture:** Elucidate the meaning and treatment of losses. |
| | 3. Treatment for Scrap value of the wastage or loss. | 3. Explain the treatment for scrap value of normal loss. | 3. Identify the accounting treatment for sale of scrap. | **Interactive Lecture:** Discuss the treatment for normal and abnormal wastages. |
| | 4 Identify the Abnormal Effectives. | 4. Explain the concept of Abnormal effectives. | 4. Identify the accounting treatment for abnormal effectives. | **Activity:** Visit the paper manufacturing firm and learn about the various costs elements. |

| Session-3: Joint Products and By-products | | | | |
|---|---|---|---|---|
| | 1. Meaning of Joint products and by-products.<br><br>2. Difference between joint products by-products and co-products. | 1. Explain the occurrence of Joint products and by-products.<br><br>2.Enumerate various kinds of costs | 1. Identify the various types of Joint products and by-products in different industries.<br><br>2. Accounting treatment for joint products, by products and co-products. | **Interactive Lecture:** Introduction to the accounting treatment of Joint products and by-products.<br><br>**Activity:** Prepare process accounts for the manufacturing of sugar. |

## Learning Objectives

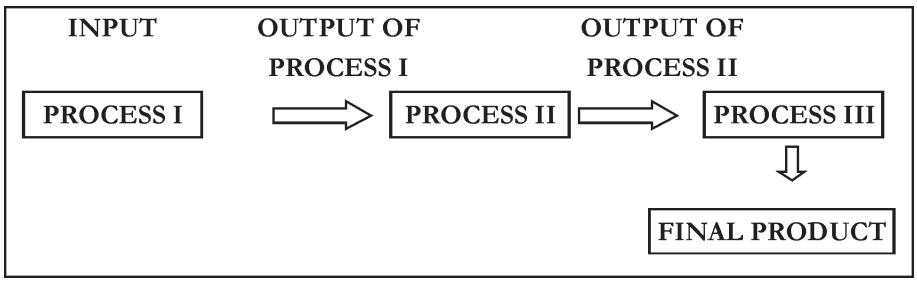
After reading the unit, the students will be able to:

- understand the general principles applicable to process costing;
- differentiate between job and process costing;
- deal with process losses and wastages;
- explain the concept of treatment of work in process accounts;
- understand the accounting treatment of joint products, by-products and co-products;
- appreciate the need for adjustment for inter process profits; and
- explain the meaning of certain key words.

## Introduction

Process costing is employed in businesses which involve mass production where the product moves in the production line through a same process or set of processes each distinct and well defined. In industries such as paper, rubber products, medicines and chemical products the processes are standardised and identical. A separate account for each process is opened and all expenditure pertaining to the process is charged to that process account which enables to compute the cost at each stage of manufacturing. This unit will focus on the very basic method of costing for goods that involve mass production called as Process Costing.

**Process Diagram**



## Session-1: Meaning of Process Costing

Process costing is employed in business where the product passes through different stages of production each distinct and well defined. For each process a separate process account is created and all the expenditure pertaining to a process is charged to that process account. In this form of costing the output of one process forms the input of the succeeding process. Process costing is applied in those industries where the products are homogeneous, standardized and the final product is the result of sequence of processes. It is employed in mass production industries where production is continuous and costs are accumulated process wise. The cost per unit is the average cost which is calculated by dividing the total process cost by number of units produced in that particular process.

### General Principles of Process Costing

In order to ascertain cost the following principles are followed in process costing:

(a) All the production activities are classified by processes and each process or department includes number of operations which are not separately measurable.

(b) All the direct and indirect costs that relate to a particular process are debited to that process account.

(c) The cost per unit is computed by dividing the total process cost by number of units produced in that particular process.

(d) The operations are in a sequence which is specific and predetermined.

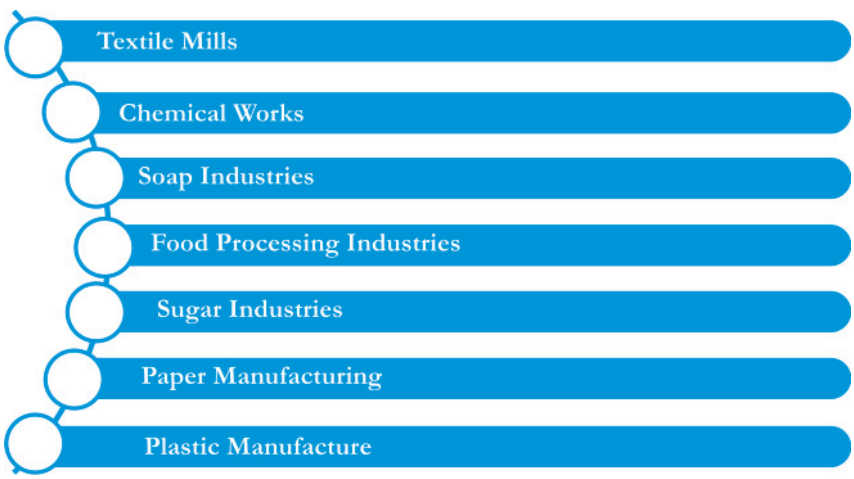
(e) In case certain products remain in process at the end of the period, their stage of completion is assessed and the inventory is calculated in terms of completed units.

(f) If there is some loss in process which cannot be avoided, then the cost of such loss is borne by the units produced in that department. This leads to increase in cost per unit.

(g) The processing of raw materials leads to the production of several products from the same raw material and such products may be joint products or by-products.

### Industries Using Process Costing

Process costing is used in mass production industries producing standard products. The major industries using process costing are:



## Knowledge Assessment - I

**Fill the blanks with the appropriate answers**

1. Process costing is employed in businesses which involve _____ where the product moves in the production line through a same process or set of processes each distinct and well defined.
2. The cost per unit is the _____ which is calculated by dividing the total process cost by number of units produced in that particular process.
3. Some loss of material in process is unavoidable and such a loss leads to _____ in the average cost per unit of that department.
4. All the direct and indirect pertaining to a particular process are _____to that process account.
5. The processing of raw materials leads to the production of several such products may be _____or _____.
6. Process costing is used in the business where the products are _____.
7. For each process a separate process account is created and all the _____ pertaining to a process is charged to that process account.
8. The sequence of operations is _____ and _____.

**[Ans:** 1 - mass production, 2 - average cost, 3 - increase, 4 - debited, 5 - joint products, by products, 6 - homogeneous, 7 - expenditure, 8 - specific, predetermined]

### Difference between Job Costing and Process Costing

The basic difference between job costing and process costing is as follows:

| S.No | Basis of difference | Process Costing | Job Costing |
|---|---|---|---|
| 1 | Cost Computation | Costs are calculated according to each process and the cost per unit is the average cost. | Costs are computed for each job separately which is the cost unit. |
| 2 | Cost Unit | The cost unit in case of process costing is a process. | The cost unit in case of job costing is a "job". |
| 3 | Specific Order | The goods are manufactured for mass consumption and hence no. specific order. | Production is against. orders from customers. |
| 4 | Nature | Each process for the total output is same. | Each job may be different. |
| 5 | Supervision and Control | Less Supervision and Control is required as the work is standardized. | More Supervision and Control is required as each job is different. |

| | | | |
|---|---|---|---|
| 6 | Completion of job | Cost is computed at the completion of each process hence it is not important to complete the Job. | After the completion of the job all the costs are added in order to determine the total cost of the job. |

## Session-2: Process Costing Procedure

The essential stages in Process Costing are as follows:

1. The factory is divided into number of processes and an account is maintained for each process.
2. Each process is debited with material cost, labour cost, direct expenses and overheads allocated or apportioned to the process.
3. The output of a process is transferred to the subsequent process in a manner that the output of one process becomes the input of other process.
4. The finished output of the last process is transferred to the finished goods account.

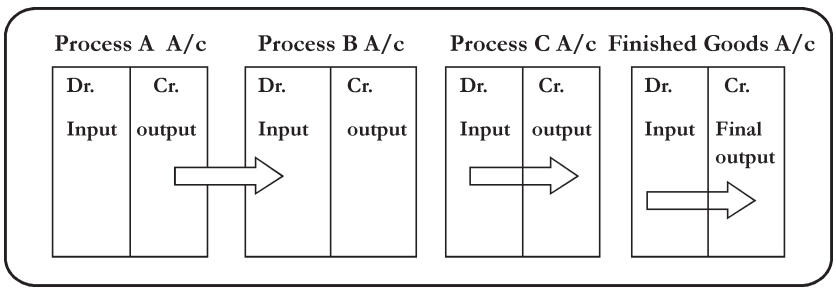



**Illustration 1:** A product passes through three processes to completion. These processes are Process A, Process B and Process C respectively. During the week ending 30th June 2015, 2000 units are produced. The following information is obtained:

| | Process A (Rs.) | Process B (Rs.) | Process C (Rs.) |
|---|---|---|---|
| Material | 12,000 | 6,000 | 4,000 |
| Labour | 10,000 | 8,000 | 10,000 |
| Direct expenses | 2,000 | 400 | 2,000 |

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

**Solution:**

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

| Particulars | Total (Rs.) | Per unit (Rs.) | Particulars | Total (Rs.) | Per unit (Rs.) |
|---|---|---|---|---|---|
| To Materials | 12,000 | 6 | By output | 26,000 | 13 |
| To Labour | 10,000 | 5 | transferred to | | |
| To Direct expenses | 2,000 | 1 | Process B | | |
| To indirect expenses | 2,000 | 1 | | | |
| | **26,000** | **13** | | **26,000** | **13** |

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

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

$= 20\%$

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

| Particulars | Total (Rs.) | Per unit (Rs.) | Particulars | Total (Rs.) | Per unit (Rs.) |
|---|---|---|---|---|---|
| To Process A (Tfr.) | 26,000 | 13 | By output transferred | 42,000 | 21 |
| To Materials | 6,000 | 3 | to Process B | | |
| To Labour | 8,000 | 4 | | | |
| To Direct expenses | 400 | 0.20 | | | |
| To Indirect expenses | 1,600 | 0.8 | | | |
| | **42,000** | **21** | | **42,000** | **21** |

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

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

**Illustration 2:** From the given information prepare the process accounts indicating the cost of process and the total cost. The production was 960 articles per week.

| | Process I(Rs.) | Process II(Rs.) | Process III(Rs.) |
|---|---|---|---|
| Material | 6,000 | 2,000 | 800 |
| Labour | 3,200 | 8,000 | 2,400 |
| Direct expenses | 1,040 | 2,880 | 1,000 |

Indirect expenses amounting to Rs.3,400 should be apportioned on the basis of wages. Ignore stock in hand and work in progress at the beginning and end of each week.

**Solution:**

**Dr. Process I Account (Output 960 Units) Cr.**

| Particulars | Amount (Rs.) | Per unit (Rs.) | Particulars | Amount (Rs.) | Per unit (Rs.) |
|---|---|---|---|---|---|
| To Materials | 6,000 | 6.25 | By output transferred to | 11,040 | 11.50 |
| To Labour | 3,200 | 3.33 | Process II | | |
| To Direct expenses | 1,040 | 1.08 | | | |
| To indirect expenses | 800 | 0.83 | | | |
| | **11,040** | **11.50** | | **11,040** | **11.50** |

Indirect expenses as a percentage of labour $= \frac{3,400}{3,200+8,000+2,400} \times 100$

$= \frac{3,400}{13,600} \times 100$

$= 25\%$

**Dr. Process II Account (Output 960 Units) Cr.**

| Particulars | Amount (Rs.) | Per unit (Rs.) | Particulars | Amount (Rs.) | Per unit (Rs.) |
|---|---|---|---|---|---|
| To Process I (Transfer) | 11,040 | 11.50 | By output transferred to | 25,920 | 27 |
| To Materials | 2,000 | 2.08 | Process III | | |
| To Labour | 8,000 | 8.33 | | | |
| To Direct expenses | 2,880 | 3 | | | |
| To Indirect expenses | 2,000 | 2.08 | | | |
| | **25,920** | **27** | | **25,920** | **27** |

**Dr.** **Process III Account (Output 960 Units)** **Cr.**

| Particulars | Amount (Rs.) | Per unit (Rs.) | Particulars | Amount (Rs.) | Per unit (Rs.) |
|---|---|---|---|---|---|
| To Process II (Transfer) | 25,920 | 27 | By output transferred to | 30,720 | 32 |
| To Materials | 800 | 0.83 | Finished Stock | | |
| To Labour | 2,400 | 2.5 | | | |
| To Direct expenses | 1,000 | 1.04 | | | |
| To Indirect expenses | 600 | 0.625 | | | |
| | **30,720** | **32** | | **30,720** | **32** |

## Process Losses and Wastages

There is certain amount of loss that occurs at various stages of production which may be attributable to evaporation, chemical reaction, inefficiency etc that results in wastage of units during the course of manufacturing process. Such loss can be classified into normal or abnormal loss.

## Normal Process Loss

It is the percentage of wastage arising in a particular process during normal conditions which cannot be avoided.The loss due to normal wastage should be charged to the good units (effectives) arising out of the process.This loss is absorbed as an additional cost of good units produced by the process.

## Treatment of Normal Loss

- In case the scrapped units have certain value, such an amount should be credited to the process account.
- In case the scrap is of very small value then the total proceeds of the scrap will be credited to the Works Overhead Account. The loss in weight or volume must be shown in the Process Account.
- In some processes a proportion of the output must be re-worked either in the same process or an earlier one.The process should be credited with the value of such materials and should be charged to the process where the material is relegated.

**llustration 3 :** The following information pertains to Process X:

| Particulars | Amount |
|---|---|
| Material | 500 kg @ Rs. 6 per kg |
| Labour | Rs. 2,500 |
| Direct expenses | Rs. 500 |
| Indirect expenses allocated to Process X | Rs. 500 |
| Normal wastage | 10% of Input |

Prepare Process X account when:

(a) Scrap value of normal loss is nil

(b) Scrap arising out of normal has a sale value of Rs.1 per unit

**Solution:**

(a) Scrap value of normal loss is nil

**Dr.** **Process X Account** **Cr.**

| Particulars | Kg. | Amount (Rs.) | Particulars | Kg. | Amount (Rs.) |
|---|---|---|---|---|---|
| To Materials | 500 | 3,000 | By Normal Loss | 50 | _____ |
| To Labour | | 2,500 | By output transferred to | 450 | 6,500 |
| To Direct expenses | | 500 | Process II | | |
| To Indirect expenses | | 500 | | | |
| | **500** | **6,500** | | **500** | **6,500** |

Cost per unit = Rs. 6,500 ÷ 450 units = Rs. 14.44

The normal loss is absorbed by production of goods and as a result cost per unit of a product inflates. When there is no loss the cost per unit is Rs. 13 (i.e Rs. 6,500 ÷ 500 units). But when there is normal loss cost per unit goes up to Rs. 14.44.

(b) When scrap of normal loss has a sale value of Rs. 1 per unit

**Dr.** **Process X A Account** **Cr.**

| Particulars | Kg. | Amount (Rs.) | Particulars | Kg. | Amount (Rs.) |
|---|---|---|---|---|---|
| To Materials | 500 | 3,000 | By Normal Loss | 50 | 50 |
| To Labour | | 2,500 | By output transferred | 450 | 6,450 |
| To Direct expenses | | 500 | to Process II | | |
| To Indirect expenses | | 500 | | | |
| | **500** | **6,500** | | **500** | **6,500** |

Cost per unit = Rs. 6450 ÷ 450 units = Rs. 14.33.

We can observe from above that the value realized from the sale of the normal wastage reduces the cost to the extent of the sale value.

**Illustration 4:** The raw material used for producing commodity A is 400 tonnes which passes through two processes. The costs are as follows:

| Particulars | Process I (Rs.) | Process II (Rs.) |
|---|---|---|
| Material | 4,000 | - |
| Labour | 2,000 | 1,000 |
| Work expenses | 1,000 | 600 |

10% of the material is wasted in the process .The wastage has been normal. The scrap is realized at Rs. 100. Show Process I Account only.

**Solution:**

**Dr.** **Process 1 Account** **Cr.**

| Particulars | Unit (Tonnes) | Amount (Rs.) | Particulars | Kg. | Unit (Tonnes) |
|---|---|---|---|---|---|
| To Material | 400 | 4,000 | By Normal Wastage | 40 | 100 |
| To Labour | | 2,000 | By transfer to | 360 | 13,900 |
| To Work Expenses | | 1,000 | Process II | | |
| | **400** | **14,000** | | **400** | **14,000** |

Cost per unit of process I is Rs.13,900 ÷ 360 tonnes = Rs. 38.61 per tonne

**Illustration 5:** Prepare the process accounts for the information given as follows:

| Particulars | Process I | Process II | Process III |
|---|---|---|---|
| Wages and Material | 30,400 | 12,000 | 29,250 |
| Works Overhead | 5,600 | 5,250 | 6,000 |
| Production (in units) | 36,000 | 37,500 | 48,000 |
| Stock (Units from preceeding process 1st July 2015) | | 4,000 | 16,500 |
| Stock (Units from preceeding process 31st July 2015) | | 1,000 | 5,500 |

**Solution:**

**Dr.** **Process I Account** **Cr.**

| Particulars | Unit | Amount (Rs.) | Particulars | Unit | Amount (Rs.) |
|---|---|---|---|---|---|
| To Wages and Material | 36,000 | 30,400 | By transfer to Process II (Cost per unit Rs. 1) | 36,000 | 36,000 |
| To Works Overhead | | 5,600 | | | 36,000 |
| | **36,000** | **36,000** | | **36,000** | **36,000** |

**Dr.** **Process II Account** **Cr.**

| Particulars | Unit | Amount (Rs.) | Particulars | Unit | Amount (Rs.) |
|---|---|---|---|---|---|
| To opening stock @ Rs.1 per unit | 4,000 | 4,000 | By Wastage | 1,500 | — |
| | | | By Stock as on 31st July 2015 | 1,000 | 1,000 |
| To Transfer from Process I (Cost per unit Rs.1) | 36,000 | 36,000 | By transfer to process III (Cost per unit Rs.1.5) | 37,500 | 56,250 |
| To Wages and Material | | 12,000 | | | |
| To Works Overhead | | 5,250 | | | |
| | **40,000** | **57,250** | | **40,000** | **57,250** |

**Dr.** **Process III Account** **Cr.**

| Particulars | Unit | Amount (Rs.) | Particulars | Unit | Amount (Rs.) |
|---|---|---|---|---|---|
| To opening stock @ Rs. 1.5 per unit | 16,500 | 24,750 | By Wastage | 500 | —— |
| | | | By Stock as on 31st July 2015 @ Rs.1.50 per unit | 5,500 | 8,250 |
| To transfer from Process II | 37,500 | 56,250 | | | |
| To Wages and Material | | 29,250 | By Finished Goods Account (Cost per unit Rs.) | 48,000 | 1,08,000 |
| To Works Overhead | | 6,000 | | | |
| | **54,000** | **1,16,250** | | **54,000** | **1,16,250** |

## Abnormal Process Loss

Any loss in excess of normal process loss is known as Abnormal Process Loss.This loss may be attributable to faulty plant design, sabotage, carelessness, breakdown of the machinery, accident, use of defective materials etc.The abnormal loss is not absorbed by the cost of production as it would unreasonably inflate the cost of production per unit rather it is transferred to Costing Profit and loss A/c.

## Treatment of Abnormal Loss

(a) To find out the amount of normal loss.

(b) After considering normal loss find out the cost per unit in that process assuming that there is no abnormal loss by using the following formula:

$$\text{Cost per unit} = \frac{\text{Total cost-Value of normal loss}}{\text{Units introduced - Normal loss units}}$$

(c) Multiply the Abnormal Loss units with the cost per unit as computed above. This gives

the total value of abnormal wastage.

(d) The abnormal wastages account is to be debited and the relevant Process Account shall be credited with the amount and quantity of abnormal wastage.

(e) The balance in the process account reflects the cost of good units produced in the process.

(f) The scrap or saleable value of abnormal loss units shall be credited to the "Abnormal Wastage Account " and shall be closed by transferring it to the Costing and Profit and Loss A/c.

**Illustration 6:** 2,000 units of raw material were introduced in a process at a cost of Rs. 8,000. The normal wastage allowed is 10%, each unit of waste realizes Rs. 2.5. The actual production was 1,700 units (with abnormal wastage of 100 units).The expenses being as follows:

Direct wages Rs. 13,000

Indirect expenses Rs. 6,500

Prepare the process account to show the effect of wastage.

**Solution:**

**Dr. Process Account Cr.**

| Particulars | Unit | Amount (Rs.) | Particulars | Unit | Amount (Rs.) |
|---|---|---|---|---|---|
| To Raw Material | 2,000 | 8,000 | By Normal Loss A/c | 200 | 500 |
| To Direct Wages | | 13,000 | By Abnormal LossA/c | 100 | 1,500 |
| To Indirect expenses | | 6,500 | By transfer to Next Process | 1,700 | 25,500 |
| | 2,000 | 27,500 | | 2,000 | 27,500 |

**Working Notes**

| Particulars | Units | Cost |
|---|---|---|
| Introduced | 2,000 | 27,500 |
| Normal loss | 200 | 500 |
| Normal output | 1,800 | 27,000 |

Cost per unit for the normal output $= \frac{\text{Rs. } 27,000}{1,800}$

Cost per unit for the normal output = Rs.15

Cost of abnormal loss =15×100=1,500

**Dr.** **Abnormal Loss Account** **Cr.**

| Particulars | Unit | Amount (Rs.) | Particulars | Unit | Amount (Rs.) |
|---|---|---|---|---|---|
| To Process A/c | 100 | 1,500 | By Sale proceeds@Rs.2.5 | 100 | 250 |
| | | | By Profit and Loss A/c | | 1,250 |
| | **100** | **1,500** | | **100** | **1,500** |

## Abnormal Effectives

Abnormal effectives occur when the actual production exceeds the expected production. The excess of actual production is known as abnormal effectives. The abnormal effectives should not affect the cost of goods under the normal circumstances.The value of effectives would be similar to the good units that would have been valued had there been wastage at the normal rate. The amount shall be debited to the Relevant Process account and credited to the Abnormal Effectives account which shall be then transferred to the Costing Profit and Loss Account.

**Illustration 7 :** A product passes through three processes X,Y,Z. The normal wastage of each process is as follows: Process X- 3%, Process Y- 5%, Process Z-8%. Wastage of process X was sold at 25 paisa per unit, that of process Y at 50 paisa per unit and Process Z at Rs. 1 per unit.5,000 units were issued to process X in the beginning of November 2014 at a cost of Rs. 1 per unit. The other expenses are as follows:

| Particulars | Process X | Process Y | Process Z |
|---|---|---|---|
| Sundry materials | 500 | 750 | 250 |
| Labour | 2,500 | 4,000 | 3,250 |
| Direct expenses | 525 | 594 | 1,004.50 |
| Actual Output | 4,750 | 4,550 | 4,050 |

Prepare the process account assuming there were no opening or closing stocks. Also give abnormal wastage and abnormal gain account.

**Solution:**

**Dr.** **Process X Account** **Cr.**

| Particulars | Unit | Amount (Rs.) | Particulars | Unit | Amount (Rs.) |
|---|---|---|---|---|---|
| To Units Introduced | 5,000 | 5,000.00 | By Normal Loss A/c | 150 | 37.50 |
| To Raw Material | | 500.00 | (3% of 5,000) | | |
| To Labour | | 2,500.00 | By Abnormal Loss A/c | 100 | 175.00 |
| To Direct Expenses | | 525.00 | By Transfer to Process Y | 4,750 | 8,312.50 |
| | **5,000** | **8,525** | | **5,000** | **8,525** |

$$\text{Value of abnormal Wastage} = \frac{8.525–37.50}{5000–150} \times 100 \text{ units}$$

$$= \frac{\text{Rs. } 8,487.50}{4850}$$

$$= \text{Rs.}175$$

**Dr.** **Process Y Account** **Cr.**

| Particulars | Unit | Amount (Rs.) | Particulars | Unit | Amount (Rs.) |
|---|---|---|---|---|---|
| To Process X | 4,750.00 | 8,312.50 | By Normal Loss A/c (5% | 237.50 | 118.75 |
| To Raw Material | 37.50 | 750.00 | of 4,750 units sold at | | |
| To Labour | | 4,000.00 | 50 paisa per unit) | | |
| To Direct Expenses | | 594.00 | By Process Z | 4,550.00 | 13,650.00 |
| To Abnormal Gain | | 112.25 | | | |
| | **4,787.50** | **13,768.75** | | **4,787.50** | **13,768.75** |

**Dr.** **Process Z Account** **Cr.**

| Particulars | Unit | Amount (Rs.) | Particulars | Unit | Amount (Rs.) |
|---|---|---|---|---|---|
| To Process Y | 4,550 | 13,650.00 | By Normal Loss A/c (8% | 364 | 364.00 |
| To Raw Material | | 250.00 | of 4,550 units sold at | | |
| To Labour | | 3,250.00 | Rs. 1p.u) | | |
| To Direct Expenses | | 1,004.50 | By Abnormal LossA/c | 136 | 577.50 |
| | | | By Finished Goods A/c | 4,050 | 17,212.50 |
| | **4,550** | **18,154** | | **4,550** | **18,154** |

**Calculation of Abnormal Loss and Abnormal Effectives**

**Process X**

$$\text{Cost of Abnormal Loss} = \frac{8,487.50}{4,850} \times 100$$

**Process Y**

$$\text{Cost of Abnormal Effectives} = \frac{13,537.50}{4,12.50} \times 37.50$$

**Process Z**

$$\text{Cost of Abnormal Loss} = \frac{17,790.50}{4,186} \times 136$$

**Dr.** **Abnormal Loss Account** **Cr.**

| Particulars | Unit | Amount (Rs.) | Particulars | Unit | Amount (Rs.) |
|---|---|---|---|---|---|
| To Process X | 100 | 175.00 | By sale of wasted units : | 100 | 25.00 |
| To Process Z | 136 | 577.50 | Process X @ 25 Paisa p.u | 136 | 136.00 |
| | | | By sale of wasted units : Process Z@ Rs. 1p.u | | |
| | | | By Costing Profit and Loss Account | | 591.50 |
| | **236** | **752.50** | | **236** | **752.50** |

**Dr.** **Abnormal Gain Account** **Cr.**

| Particulars | Unit | Amount (Rs.) | Particulars | Unit | Amount (Rs.) |
|---|---|---|---|---|---|
| To Normal wastage A/c @ 50 paisa per unit | 37.50 | 18.75 | By Process Y | 37.50 | 112.50 |
| To Costing and Profit and Loss A/c | | 93.75 | | | |
| | **37.50** | **112.50** | | **37.50** | **112.50** |

**Dr.** **Normal Loss Account** **Cr.**

| Particulars | Unit | Amount (Rs.) | Particulars | Unit | Amount (Rs.) |
|---|---|---|---|---|---|
| To Process X A/c (3% of 5,000) | 150.00 | 37.50 | By sale proceeds of wasted units: | | |
| To Process Y A/c (5% of 4,750 units sold at 50 paisa per unit) | 237.50 | 118.75 | Process X<br>Process Y<br>Process Z | 150.00<br>200.00<br>364.00 | 37.50<br>100.00<br>364.00 |
| To Process Z A/c (8% of 4,550 units sold at Rs.1p.u) | 364.00 | 364.00 | By Abnormal Effectives A/c | 37.50 | 19.00 |
| | 751.50 | 520.25 | | 751.50 | 520.25 |

***Note:** Actual wastage in Process Y is only 200 units, but we have credited the Process A/c with the sale proceeds of abnormal loss i.e 237.50 units. The shortfall in the sale of normal loss of 37.50 units @50 paisa per unit has been debited to abnormal effectives account and credited to Normal Loss account.

## Knowledge Assessment - II

**State whether the following statements are (T) or (F)**

1. The cost unit in case of job costing is a process.
2. In process costing, less Supervision and Control is required as the work in process gets standardized.
3. In process costing, each process is debited with material cost, labour cost, direct expenses and overheads allocated or apportioned to the process.
4. The finished output of the last process is transferred to the finished goods account.
5. Normal Loss represents unusual Loss of Output quantity which can be controlled.
6. When actual output obtained is higher as compared to expected output, then such loss of output is known as Abnormal Loss.
7. Process costing entail certain amount of loss occurs at various stages of production which may be attributable to evaporation, chemical reaction, inefficiency etc. which is called normal loss.
8. The cost of spoiled and loss units is absorbed as an additional cost of good units produced by the process.
9. Faulty plant design, sabotage, carelessness, breakdown of the machinery, accident, use of defective materials etc. are the causes for abnormal losses.
10. Abnormal effectives occur when the actual production falls below the expected production.

**[Ans:** 1(F), 2(T), 3(T), 4(T), 5( F), 6(F), 7(T), 8(T), 9(T), 10(F)**]**

## Session-3: By-Products and Joint Products

### By-Products

By-products are secondary products whose value is relatively small and are incidental to the production of the main product. For example in the production of sugar mills the sugar is the main product but molasses and bagasse are incidental to the production of sugar.These molasses and bagasse are relatively of smaller value and hence are the by –product of sugar.

By products may be

- Sold in their original form without further processing
- Sold after further processing.

**Examples of By-products:**

| Industry | By-product |
|---|---|
| Sugar | Bagasse, Molasses |
| Cotton textile | Cotton seed |
| Edible oil | Oil cake |
| Meat | Bones |
| Rice mills | Husk |

## Accounting for By-products

There are various methods to account for By-products as follows:

1. If the joint products are of small value then the cost of joint product is not apportioned to By-product.The net income by the sale of by-products may be treated in any of the following ways :
   (i) It may be treated as miscellaneous income and credited to costing and profit and loss account
   (ii) It may be credited to the process account in which the by product has arisen.

**Note:**

1. Any selling and distribution expenses incurred in the sale of by-product or any cost of further processing of by-products in order to make them saleable must be deducted from the sale value of by- products for determining the net income from by-products.
2. If by-products are of relatively high value then it is feasible to apportion a part of joint cost to by-products.Such cost of by products is debited to by-products account and credited to the main product account. Any cost incurred in further processing of by product is debited to by-product account.The by-product account is credited with its sale value and any profit/loss arising out of this account is transferred to costing profit and loss account.The apportionment can be done by either of the four methods:
   (i) Sales value method
   (ii) Physical units method
   (iii) Average cost method
   (iv) Points value or survey method
3. Where by-products require further processing: In such a situation the profit and further processing cost is subtracted from the net realizable value in order to arrive at the share of by-product in joint product at the split off point using the reverse cost method.

## Co-Products

In case of joint products the production of two or more products has to proceed simultaneously

while in case of co-products the production of one or more co-products can proceed without the production of other products. For example in automobile industry different products like Sedans, Hatchbacks Crossover Cars and SUV's are co-products.

**Illustration 8:** Product Zeta yields two by-products A and B. The joint cost of manufacture is Rs. 32,900. From the following information apportion the joint cost of manufacture:

| Particulars | Zeta | A | B |
|---|---|---|---|
| Sales Rs. | 50,000 | 20,000 | 12,500 |
| Manufacturing cost after separation | | 2,500 | 2,000 |
| Estimated selling expenses on sales | | 20% | 20% |
| Estimated profit on sales | | 25% | 30% |

**Solution:**

**Statement of Cost of By-Products A and B**

| | A (Rs.) | B (Rs.) |
|---|---|---|
| Sales<br>**Less:** profit | 20,000<br>5,000 | 12,500<br>3,750 |
| Cost(i) | **15,000** | **8,750** |
| **Less:** cost after separation<br>selling expenses | 2,500<br>2,500 | 2,000<br>4,000 |
| Total (ii) | **6,500** | **4,500** |
| Share in joint cost (i-ii) | 8,500 | 4,250 |

## Joint Products

The joint product is a term used for two or more products of almost equal economic value which are simultaneously produced from the same manufacturing process and the same raw material. Hence, the joint products usually require more processing with each product in a proportion that no single product is designated as a major product.

## Characteristics of Joint Products:

(a) They are produced simultaneously from the same raw material in natural proportions.

(b) They are produced simultaneously by common process.

(c) Their economic value is almost same.

(d) They can be sold after separation or after further processing.

**Examples of Joint products:**

| Industry | Joint Products |
|---|---|
| Oil refining | Petrol, diesel, kerosene, grease, lubricating oils etc |
| Dairy | Skimmed milk, butter |
| Mining | Several metals from the same ore. e.g copper, silver, zinc, iron |
| Meat processing | Meat, hides, bones, grease. |
| Coal gas | Coke, tar, benzol and sulphate of ammonia |
| Sheep rearing | Meat, wool, hide |

## Accounting for Joint Products

Accounting for joint products means apportionment of joint cost to each of the joint product.The objective for apportionment of cost is as follows:

(a) To determine cost per unit of the product.

(b) To help inventory valuation.

(c) To determine profit or loss on each line of product.

(d) To determine the price of each product.

Following are the major methods of apportioning the joint costs to various joint products :

1. **Market Price Method:** Under this method the joint costs are apportioned to the various joint products upto the split off point. The market price may be either (i) at the split off point or (ii)after further processing. In case of (i)method the costs are apportioned to the joint products according to the proportion of total selling price of each of the joint product. However where the market price at the split off is not available then method (ii) is adopted. In this case the selling price of each of the product is reduced by the cost of manufacture beyond the split off point is considered as the basis for allocation of the joint cost.

**Illustration 9:** The total joint cost of product X,Y and Z till the split off point are Rs. 28. The market price of these products are Rs. 12, Rs. 18 and Rs. 38 respectively. Cost of manufacture beyond the split off point are Rs. 4, in case of product X, Rs. 2 in case of product Y and Rs. 6 in case of product Z. Allocate the joint cost by market price method.

**Solution:**

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

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

2. **Unit method:** Under this method the common costs of the joint products are allocated on the basis of physical output of each joint product at the split off point. If the output of different joint products is not measurable in the same units, then they must be converted into common denominator. For example in the manufacture of coke, products such as coke, sulphate of ammonia, gas, benzol, coal, tar are measured in different units. The yield of these recovered units is measured on the basis of quantity of product extracted per tonne of coal.

**Illustration 10:** The following data has been extracted from the books of Andhra Coke Ltd.

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

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

**Solution:**

**Statement of Apportionment of Joint Cost**

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

3. **Reverse Cost method or working backward method:** This is the most practical method. In this method from the sale value of each product we deductthe estimated net profit, selling expenses and the processing costs after the split off point. This gives the estimated cost of each product at the split off point. The common costs may be apportioned to different products in the ratio of these estimated cost.

4. **Survey Method:** This method is based on the realization that joint costs cannot be allocated satisfactorily by considering one or two factors .under this method the management conducts a survey in order to collect all information of the factors involved. This method is more equitable as combination of related factors is considered.

**Illustration 11:** The three joint products produced in a factory are A,B,C. Their joint costs is Rs.60,000.Quantities produced are as follows:

A 2,000
B 800
C 1,200

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

**Solution:**

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

***Working note:**

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

## Knowledge Assessment - III

**Fill the blanks with the appropriate answers**

1. _____ mean secondary products that are relatively of smaller value which are incidentally or unavoidably produced in the course of manufacturing the main product.
2. In the production of sugar, the sugar is the main product but _____ is incidental to the production of sugar.
3. Where _____ are of small value, it is not practical to apportion any part of joint cost to by-products.
4. Where _____ are of considerable total value, it is appropriate to apportion a part of joint cost to by-products.
5. In case of _____ the production of one or more products can proceed without the production of other products.
6. The _____ is a term used for two or more products of almost equal economic value which are simultaneously produced from the same manufacturing process and the same raw material.
7. Under _____ method, the joint costs are apportioned to the various joint products upto the split off point.
8. Under unit method, the common costs of the joint products are allocated on the basis of _____ of each joint product at the split off point.
9. Reverse Cost method is also known as _____ method.
10. Under _____ method, the management conducts a survey in order to collect all information of the factors involved.

**[Ans:** 1- By-products, 2- Molasses/Bagasse, 3- Joint products, 4- By-products, 5- Co-products, 6- Joint product, 7- Market price, 8- Physical output, 9- Working backward, 10- Survey**]**

## Keywords

- **Process Costing:** This method of costing is employed in mass production industries where production is continuous and costs are accumulated process wise.
- **By-product:** A product that is secondary to main product and obtained during the course of manufacture of recognized main product.
- **Common cost:** The cost of facilities or services that is common to more than one activity.

- **Joint costs:** The common cost of facilities or services employed in the output of two or more simultaneously produced or otherwise closely related operations, commodities or services.
- **Joint products:** Two or more products separated in the course of processing, each having sufficiently high saleable value to merit recognition as a main product.

## Summary

- Process costing is used in the business where the products are homogeneous, standardized and the final product is the result of sequence of process. Process costing is used in mass production industries producing standard products. The major industries using process costing are Sugar Industry, Paper Industry, Mining Industry, Cement Industry, Breweries Industry and Flour Milling Industry etc.
- The usual percentage of wastage arising in a particular process or operation is known as Normal Loss. It is a loss that cannot be avoided as it is expected to occur during normal conditions. Any loss in excess of normal process loss is known as Abnormal Process Loss. This loss may be attributable to faulty plant design, sabotage, carelessness, breakdown of the machinery, accident, use of defective materials etc. Abnormal effectives occur when the actual production exceeds the expected production. The amount shall be debited to the relevant process account and credited to the Abnormal Effectives account which shall be then transferred to the Costing Profit and Loss Account.
- By- products mean secondary products that are relatively of smaller value which are incidentally or unavoidably produced in the course of manufacturing the main product. Two or more products separated in the course of processing, each having sufficiently high saleable value to merit recognition as a main product are known as joint products. In the production of co-products, one or more co-products can proceed without the production of other products. Such co-products are produced simultaneously from the same raw material in natural proportions, by common process.

## Exercise Questions

### Short Answer Questions

1. What do you mean by Job Costing?
2. How is a Normal Loss different from Abnormal Loss?
3. What is process costing?
4. Explain the concept of survey method of costing.

### Long Answer Questions

1. Distinguish between Job Costing and Process Costing.
2. Define joint products and by-products and cite an example on each.
3. Explain various basis for the apportionment of Joint cost to Joint products.

4. Explain the normal and abnormal wastage and how would they be dealt in process costing.
5. How would you deal with by products in costing :
   (i) Where they are of small total value.
   (ii) Where they are of considerable total value
   (iii) Where they require further processing
6. Write short notes on :
   (i) By-products
   (ii) Abnormal gain in process costing
   (iii) Normal Loss
   (iv) Process costing
7. How would you distinguish between joint products, co-products and by-products?
8. What are the different methods of allocating joint costs?

## Numerical Questions

1. A food manufacturing process has a normal wastage of 5% which can be sold as animal food stuff at Rs. 10 per tonne. The following data for a given period was collected:input material 200 tonnes @ Rs. 25 per tonne labour and overhead expenses Rs. 3,000. Losses were at the normal level. Compute the cost per tonne.

**(Ans:** Cost per tonne-Rs. 41.58, Normal wastage 10 units**)**

2. Ayush Ltd. produces a herbal shampoo which is made by subjecting the herbs to two successive processes A and B. The following data in respect of processing has been obtained from the accounting records of the company for a cost period.

| **Particulars** | **Process A** | **Process B** |
|---|---|---|
| Inputs(units) | 50,000 | 46,000 |
| Normal Loss | 10% | ? |
| **Costs Incurred** | **Rs.** | **Rs.** |
| Material(Herbs) | 9,00,000 | 1,96,000 |
| Direct Labour | 4,26,000 | 2,47,000 |
| Production Overheads | 2,84,000 | 1,78,000 |
| Scrap Value | 7 | 20 |

The output of process A is transferred to process B. The output of process B was 43,200 units, which were sold at Rs. 60 per unit showing a profit of 20% on cost.

(**Ans:** Process A: Transferred to Process B 46,000, Normal Loss-5,000, Process B: Transferred to Finished output 43,200, Normal Loss-2,300, Abnormal Loss -500**)**

3. The product of company A passes through two processes A and B and then to the finished stock account. In each process 5% of the total weight is lost and 10% is scrap which realises from process A Rs. 80 per tonne and process B Rs. 200 per tonne respectively.

The following are the figures relating to both the processes:

| **Particulars** | **Process A** | **Process B** |
|---|---|---|
| Material (tonnes) | 1,000 | 70 |
| Cost of material per tonne (Rs.) | 125 | 200 |
| Wages (Rs.) | 28,000 | 10,000 |
| Expenses(Rs.) | 8,000 | 5,250 |
| Output (tonnes) | 830 | 780 |

Prepare process account, abnormal loss account and abnormal gain account .

(**Ans:** Process A: Transferred to Process B 830, Loss in weight -50, Normal Loss-100, Abnormal loss-20, Process B: Transferred to Finished output 780, Loss in weight -45, Normal Loss-90, Abnormal Effectives -15)

4. A product is completed in two processes A and B. During a particular month, the input to process A of the basic raw material was 5,000 units at Rs. 2 per unit. Other information for the raw material is as follows:

| **Particulars** | **Process A** | **Process B** |
|---|---|---|
| Output (units) | 4,700 | 4,300 |
| Normal loss (% of input) | 5 | 10 |
| Scrap value per unit (Rs.) | 1 | 5 |
| Direct wages (Rs.) | 3,000 | 5,000 |
| Direct expenses (Rs.) | 9,750 | 9,910 |

Total overheads Rs. 16,000 were recovered as percentage of direct wages .There were no opening or closing work in progress stocks. Prepare Process A and B accounts.

(**Ans:** Process A: Transferred to Process B 4,700, Normal Loss-250, Abnormal loss-50,Process B: Transferred to Finished output 4,300, Normal Loss-470, Abnormal Effectives-70)

5. 600 kg of material was charged to process A@ Rs. 4 per kg. The direct labour accounted for

Rs. 200 and then other department expenses Rs. 760.The normal loss is 10% of the input and the net production was 500 kg assuming that the process scrap itself is saleable at Rs. 2 per kg. Prepare Process A clearly showing the value of normal and abnormal loss. Also prepare normal and abnormal loss account.

**(Ans:** Process A: Transferred to Process B 500, Normal Loss-60, Abnormal loss-40**)**

6. The output of Process X was 5,000 units. Normal loss allowed was 10% of the input. Abnormal loss was 400 units. The following information is further provided:

Material @ Rs. 5 per unit

Labour Rs. 8, 000

Overheads Rs. 6, 700

Wastage realised Rs. 2.50 per unit

Prepare Process X Account and Abnormal Loss Account.

**(Ans:** Process X: Transferred to Process Y 5000, Normal Loss-600, Abnormal Loss-400**)**

7. A product passes through two distinct processes A and B and then to finished stock.The output of A passes direct to B and that of B passes to finished product, From the following information you are required to prepare the process account.

| **Particulars** | **Process A (Rs.)** | **Process B (Rs.)** |
|---|---|---|
| Materials consumed | 12,000 | 6,000 |
| Direct labour | 14,000 | 8,000 |
| Manufacturing expenses | 4,000 | 4,000 |
| Input in process A (units) | 10,000 units | |
| Input in process A (value) | 10,000 | |
| Output (units) | 9,400 units | 8,300 units |
| Normal wastage (% of input) | 5% | 10% |
| Value of normal wastage (per 100 units) | 8 | 10 |

No opening or closing stock is held in process .

(**Ans:** Process A: Transferred to Process B 9,400, Normal Loss-500, Abnormal loss-100, Process B:Transferred to Finished output 8,300, Normal Loss-940, Abnormal loss -160)

8. The following details have been taken from the costing records of Nirmal Coconut Mills for the year ending March 31, 2015:

Purchase of 500 tonnes of copra Rs.2,00,000

| Particulars | Crushing (Rs.) | Refining (Rs.) | Finishing (Rs.) |
|---|---|---|---|
| Cost of labour | 2,500 | 1,000 | 1,500 |
| Electric power | 600 | 360 | 240 |
| Sundry materials | 100 | 2,000 | —— |
| Repairs of machinery | 280 | 330 | 140 |
| Steam | 600 | 450 | 450 |
| Factory expenses | 1,320 | 660 | 220 |

Costs of casks Rs. 7,500

Tonnes of crude oil produced 300 tonnes

Oil produced by refining process 500 tonnes

Refined oil finished for delivery 496 tonnes

Copra sacks sold for Rs. 400

175 tonnes of copra residue sold for Rs. 11,0000

Loss in weight in crushing 25 tonnes

45 tonnes of by-product obtained from refining process valued at Rs. 6,750

Prepare the account of each of the stages of manufacturing for the purpose of arriving at the cost per tonne of each process and the total cost per tonne of finished oil:

(a) Copra crushing process

(b) Refining process

(c) Finishing process (including Casking)

(**Ans:** cost of crude oil transferred to refining process Rs. 1,94,000, cost of refined oil transferred to finishing process Rs. 1,92,050, Cost of finished oil produced Rs. 1,94,600)

# UNIT - 5

## OPERATING OR SERVICE COSTING

| Unit Code-5 | UNIT TITLE: OPERATING OR SERVICE COSTING | | | |
|---|---|---|---|---|
| **Location:** Class Room | **Session-1: Basics of Operating or Service Costing** | | | |
| | **Learning Outcome** | **Knowledge Evaluation** | **Performance Evaluation** | **Teaching & Training Method** |
| | 1. Concept of Operating /Service Costing. | 1. Describe the significance of operating costing. | 1. Specify the importance for collecting the cost data. | **Interactive Lecture:** Discussing the concept and use of operating costing. |
| | 2. Unit of Cost under Operating/Service Costing. | 2. Which are various cost units for service undertakings. | 2. Identify various type of businesses using operating or service costing. | **Activity:** Visit any service undertaking using operating costing to understand its applicability and its cost unit. |
| | 3. Applicability of Operating Costing. | 3. Which businesses use operating costing. | 3. How do you determine the unit of cost for service undertakings. | |
| | **Session-2: Transport Costing** | | | |
| | 1. Costing for Transport Business. | 1. Explain the concept of transport costing. | 1. Identify the various cost components in transport costing technique. | **Interactive Lecture:** Introduction to Transport costing. |
| | 2. Cost heads under Transport Costing. | 2. Explain various cost heads under transport costing. | 2. Prepare a log sheet for bus service business. | **Activity:** Visit any transport company and understand the log sheets and cost units. |
| | 3. Daily Log Sheets in Transport Costing. | 3. Describe the use of log sheets in transport business. | 3. Calculate the cost unit for the transport business carrying goods. | |

| Session-3: Power House and Canteen Costing | | | | |
|---|---|---|---|---|
| | 1. Concept of Power House Costing. | 1. Explain the importance of power house costing. | 1. List out the procedure for doing power house costing. | **Interactive Lecture:** Discussion on power house and canteen costing. |
| | 2. Concept of Canteen Costing. | 2. Enumerate the Proforma for canteen cost sheet. | 2. Identify the various steps in the preparation of canteen cost sheet. | **Activity:** Prepare a canteen cost sheet for any one canteen of a school. |

## Learning Objectives

After reading this unit, student will be able to:

- understand the concept of operating costing
- determine the unit of cost under operating costing
- learn the costing for transport business
- explain the concept of power house costing
- understand the concept of canteen costing
- explain the meaning of certain keywords

## Introduction

The products available in the market can be in tangible or intangible form. The intangible products are popularly known as "Services". We have learnt various costing methods like unit costing, job costing, batch costing etc. which are applicable for the tangible manufacturing output. A service undertaking has to follow a different kind of costing method known as "Operating or Service Costing". A service can be internal or external. Internal services are those services which are rendered internally to another department for a transfer price. For example, a maintenance department is providing repair services to the factory, canteen providing catering services to the factory labour etc. External services are those services which are rendered to the external customers for a selling price. There are many service undertakings offering services like transport service by transport company carrying goods/passengers, food service by canteens/caterers, electricity service by power house companies, hospitality service by hotels and motels, health care service by hospitals etc. All these undertakings are required to calculate the cost of rendering a service unit for which they use "Operating or Service Costing."

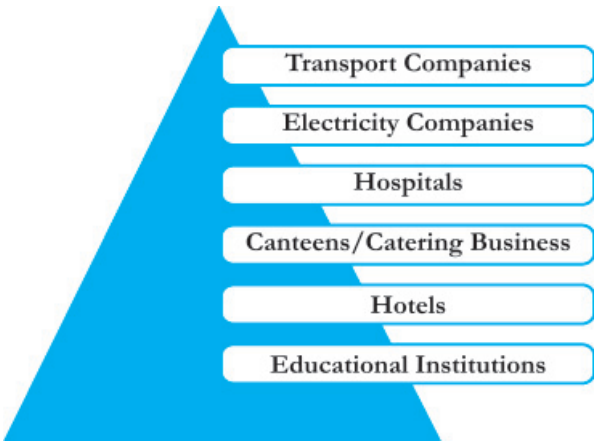
# Session-1: Basics of Operating or Service Costing

## Meaning of Operating/Service Costing

Operating costing is concerned with the ascertainment of operating cost for rendering a unit of service. It is a method of costing for the enterprises producing services rather than tangible commodities. CIMA has defined "Operating Costing" as that form of costing which applies in case of standardised service offering by an undertaking or by a service cost centre within that undertaking. The calculation of cost of service unit is not a complex job. The various cost associated with the operations of

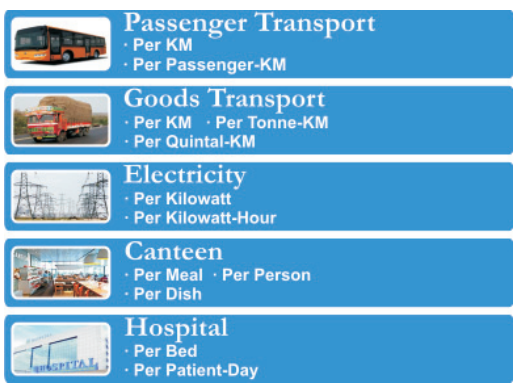
services for a particular period are ascertained and grouped under appropriate heads. The total cost is then divided by the total number of service units to determine the cost per unit of service. This costing method helps the enterprise to fix the selling price for their services. In case of operating costing, the determination of unit of cost is a major chore which would be discussed in the next section. Major Service organizations that use operating costing are:

1. Transport Companies
2. Electricity Companies
3. Hospitals
4. Canteens/Catering Businesses
5. Hotels
6. Educational Institutions, etc.




## Determination of Unit of Cost

In operating costing, an appropriate unit of cost is required to be established for the determination of cost per unit of service. Cost unit can be a simple cost unit or a composite cost unit depending upon the type of service. Transport cost on per kilometre basis is an example of simple cost unit. In case of catering services, cost per meal is also a simple cost unit. The composite cost unit refers to both quantum and period of service. For example, per tonne-km is a composite cost unit in case of transport of goods business and per passenger-km for transport of passenger business. Cost per tonne-km represents the cost of transporting one tonne of goods for one kilometre. Similarly, in case of Electricity Corporation, a composite unit like per kilowatt-hour represents cost charges for one kilowatt for one hour. Figure below presents the cost units for various service undertakings:



Composite units can be worked out in two different ways:

1. **Absolute Composite Units:** It is the weighted average of two units which is arrived at by multiplying the load quantity by the respective distance in case of tonne-km or quintal-km.

2. **Commercial Composite Units:** In commercial tonne-km case, the unit is arrived at by multiplying simple average tonnes with the total distance.

**Illustration 1:** A truck starts with carrying 40 tonnes from station X to station Y. It unloads 20 tonnes at station Y and carried 20 tonnes to station Z. From station Z to Station X, it carries 30 tonnes. The distance between station X and Y, Y and Z and from Z to X is 15 km, 20 km and 30 km respectively. Calculate absolute and commercial tonne-km.

**Solution:**

| | |
|---|---|
| Absolute tonne-km | = 40 X 15 + 20 X 20 + 30 X 30 |
| | = 600 + 400 + 900 |
| | = 1900 tonne-km |
| Commercial tonne-km | = Average tonnes X Total distance travelled |
| | = (40+20+30)/3 X 65 |
| | = 1950 tonne-km |

## Collection of Cost Data

After the unit cost for the service has been determined, the total cost data for rendering the services is to be recognised and collected in a suitable manner. Cost data is further to be classified under appropriate heads. The total cost elements are segregated under Fixed, Semi-variable, Variable heads for proper management and control. Fixed cost is the cost that does not change with the change in service units rendered in the particular period. Variable cost directly varies with the number of service units rendered. Semi-variable or Semi-fixed is the cost component that comprises both the fixed and variable costs elements.

**Illustrations 2:** The following are the details of tonnes of goods transported by M/s. Gurinder Enterprises on certain days of February 2015:

| Dates | Tonnes | Kilometre Travelled |
|---|---|---|
| 4th February 2015 | 60 | 40 |
| 6th February 2015 | 35 | 100 |
| 14th February 2015 | 50 | 20 |
| 28th February 2015 | 20 | 35 |

You are required to calculate the cost per tonne-km, if the total cost for the enterprise is Rs. 4,18,000 for the above mentioned month.

**Solution:**

| | | |
|---|---|---|
| Total cost units and cost per Tonne-Km: | | |
| 4th February 15 | = 60 X 40 | = 2400 Tonne-Km |
| 6th February 15 | = 35 X 100 | = 3500 Tonne-Km |
| 14th February 15 | = 50 X 20 | = 1000 Tonne-Km |
| 28th February 15 | = 20 X 35 | = 700 Tonne-Km |
| Total cost units in February | | = 7600 Tonne-Km |
| Cost per Tonne-Km is | | = 4,18,000 / 7600 |
| | | = 55 Rs per Tonne-Km |

## Knowledge Assessment – I

**State whether the following statements are true (T) or false (F)**

1. A service undertaking has to opt for a different kind of costing method called as operating costing.
2. Cost unit can be a simple cost unit or multiple cost units depending upon the type of service.
3. Operating costing is concerned with the ascertainment of operating cost for manufactured tangible product.
4. Operating costing method helps the enterprise to fix the selling price for their services.
5. Operating costing applies in case of a business having standardised service offering to external clients or internal departments.
6. Hospitals do not use the operating costing.
7. Operating costing is also known as service costing.
8. Fixed cost varies with the service output.

**[Ans:** 1(T), 2(F), 3(F), 4(T), 5(T), 6(F), 7(T), 8(F)**]**

## Session-2: Transport Costing

### Meaning of Transport Costing

Transport business is one of the major service businesses that make use of operating costing method. There are transporters who provide services for carrying either goods or passenger (or both). Tonnes or quintals of raw material and finished goods are transported widely by the manufacturing industries for which they use the services of transport companies. The transporter has to provide a quote to their client which is the price set by him for his services. To arrive at the selling price, he is supposed

to work out the cost per service unit. The service units in case of transporter carrying goods are usually cost per kilometre, cost per tonne-km, cost per quintal-km etc. The service units in case of transporter providing services to passenger are cost per kilometre, cost per passenger, cost per passenger-km etc. A transport operating cost sheet is prepared wherein the components of cost are categorized differently based on the nature of service business. These cost components in transport costing has been discussed in one of the upcoming section.

## Log Sheet

Driver of the vehicle is provided with a log book that contains various log sheets. This log sheet provides the cost and other data on daily basis regarding the kilometre run, petrol usage, passenger/ goods carried etc. This sheet is to be filled up by the driver so as to maintain the data regularly. The same is used by the cost accountant for compiling the cost records for the particular period. Proformance statement is also prepared by the costing department showing the total and unit cost details. The specimen of the log sheet is as follows:

## Proforma for Log Sheet

| | |
|---|---|
| Vehicle Regn. No.:_____ | Date:_____ |
| Driver's Name:_____ | Start Time:_____ |
| Driver's Licence No.:_____ | End Time:_____ |
| Route No.:_____ | Remarks:_____ |

| Trip No. | From | To | Goods/Passenger At Start | Goods/Passenger Collected en route | Km (In) | Km (Out) | Time (In) | Time (Out) |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | | |
| Total | | | | | | | | |

| Supplies: | Time spent: | Time lost: |
|---|---|---|
| Petrol/Diesel | Driver | Loading delay |
| Oil | Assistant | Traffic delay |
| Grease | Cleaner | Accident delay |
| Others | Mechanic | |

## Cost Components under Transport Costing

The cost sheet under transport costing includes various types of cost that are classified under the following heads:

1. **Fixed or Standing Cost:** These are the cost which is to be incurred regardless of vehicle being in use or not. Such costs are usually fixed in nature and does not vary with the kilometre run and passengers/tonnes transported. Example: Fixed salaries, Insurance cost, Road tax, Rent of garage etc.

2. **Maintenance Cost:** They are semi-variable in nature wherein some part of the cost is fixed and the other is variable in nature. Example: Repair and maintenance of vehicle, Overhauling, Cost of tyres etc.

3. **Running Cost:** These types of cost are incurred based on the running of the vehicle. It varies with the level of operation. Thus, it is variable in nature. Example: Fuel charges, Consumables like oil and grease, driver daily wages etc.

For convenience purpose, the cost elements can also be classified under the heads like fixed cost, semi-variable cost and variable cost. In the absence of information about semi-variable cost, the costs may be shown under two heads only, i.e. fixed and variable.

**Illustrations 3:** Raghuram Pvt. Ltd. operates 2 busses between Delhi and Karnal which are 120 Km apart. Seating capacity of each bus is 40 passengers. Following particulars were obtained from their books for April, 2015:

| **Particulars** | **Amount (Rs.)** |
|---|---|
| Wages | 2,00,000 |
| Monthly salaries of office staff | 4,00,000 |
| Diesel | 50,000 |
| Insurance premium | 20,000 |
| Repairs and overhauling | 56,000 |
| Depreciation | 35,000 |
| Interest and other charges | 25,000 |

Both the busses ran all the days of the month. Each bus made one round trip per day. You are required to find out the cost per passenger km.

**Solution:**

| | |
|---|---|
| Number of Busses | = 2 |
| Capacity of Bus | = 40 |
| Capacity of Fleet | = 2 X 40, i.e. 80 Passengers |
| Number of Trips per Day | = 2 |
| Number of Days | = 30 |
| Distance Run per Trip | = 120 Km |
| Service Rendered | = 120 X 2 X 30 X 80 = 5,76,000 Passenger-Km |

**Raghuram Pvt. Ltd.**

**Operating Cost Sheet**

**For the month ending April 2015**

| Particulars | Amount (Rs.) | Per passenger -km |
|---|---|---|
| **Standing Cost** | | |
| Monthly salaries of office staff | 4,00,000 | |
| Insurance premium | 20,000 | |
| Depreciation | 35,000 | |
| Interest and other charges | 25,000 | |
| Total Standing Cost | 4,80,000 | 0.833 |
| **Maintenance Cost** | | |
| Repairs and overhauling | 1,34,000 | |
| **Total Maintenance Cost** | 1,34,000 | 0.232 |
| **Running Cost** | | |
| Wages | 2,00,000 | |
| Diesel | 50,000 | |
| **Total Running Cost** | 2,50,000 | 0.434 |
| **Total Cost** | 8,64,000 | 1.500 |

**Illustration 4:** Prepare an operating cost sheet for the period 2013-14 for M/s. Pandit Enterprises which is into transport business running 5 busses in Delhi. Following are the details extracted from the books of accounts:

The cost of 5 passenger busses are Rs. 25,00,000 (Rs. 5,00,000 each). Yearly fuel expenses is Rs. 5,00,000. Annual Repair and maintenance is 70% of fuel cost. 1500 passengers were carried over 5,000 kms during the year by the fleet of busses. Other information is as follows:

| Particulars | Amount (Rs.) |
|---|---|
| Wages of 10 cleaners | 5000 each per month |
| Wages of 5 drivers | 10,000 each per month |
| Yearly interest cost | 10% on capital |
| Office salaries | 60,000 per month |
| Rent of 5 garages | 5,000 each per month |
| Tax and licences | 1,00,000 annual |
| Office establishment | 3,50,000 annual |
| Cost recovery by sale of old tyres | 20,000 annual |

**Solution:**

**M/s. Pandit Enterprises**

**Operating Cost Sheet**

**For the year ending 31st March 2014**

| Particulars | Amount (Rs.) | Per passenger -km |
|---|---|---|
| **Annual Fixed Cost** | | |
| Interest (10% of 25,00,000) | 2,50,000 | |
| Rent for garage (5 X 5,000 X 12) | 3,00,000 | |
| Office salaries (60,000 X 12) | 7,20,000 | |
| Office establishment | 3,50,000 | |
| Tax and licences | 1,00,000 | |
| Wages of driver (5X 10,000 X 12) | 6,00,000 | |
| Wages of cleaner (10 X 5,000 X 12) | 6,00,000 | |
| **Total Annual Fixed Cost** | 29,20,000 | 0.389 |
| **Annual Variable Cost:** | | |
| Fuel cost | 5,00,000 | |
| Repair and maintenance | 3,50,000 | |
| **Total Annual Variable Cost** | 8,50,000 | 0.113 |
| **Total Cost:** | 37,70,000 | |
| Less recovery from old tyres | (20,000) | (0.002) |
| **Net Total Cost** | 37,50,000 | 0.500 |

**Working notes:** Total Service units are:

1,500 passengers X 5,000 Kms = 75,00,000 Passenger-Kms

## Knowledge Assessment – II

### Objective Type Questions

**1. Which one of these is not the component of cost in transport costing**

a. Running Cost

b. Standing Cost

c. Production Cost

d. Maintenance Cost

**2. Example of running cost is**

a. Road Tax

b. Monthly Salaries

c. Fuel Charges

d. Interest Charges

**3. The transporters may provide services for carrying**

a. Goods

b. Passengers

c. Both a and b

d. None of the above

**4. The service units in case of transport service are**

a. Passenger-Km

b. Tonne-Km

c. Quintal-Km

d. All of the above

**5. Example of standing cost is**

a. Rent of Garage

b. Cost of Tyres

c. Petrol Cost

d. Oil Charges

**6. Log sheet provides the information on daily basis regarding**

a. Kilometre Run

b. Fuel Usage

c. Goods Carried

d. All of the above

**7. Road tax is a type of which cost component in transport costing**

a. Running Cost

b. Standing Cost

c. Maintenance Cost

d. Manufacturing Cost

**8. Daily log sheet is filled up by**

a. Cost accountant

b. Chief financial officer

c. Owner of business

d. Driver

**[Ans:** 1(c), 2(c), 3(c), 4(d), 5(a), 6(d), 7(b), 8(d)**]**

## Session-3: Power House and Canteen Costing

### Introduction to Power House Costing

Power House Costing is another costing method under operating costing which is used for the concerns which are into producing electricity. Power house operating cost statement is prepared after collating the cost information on producing steam and thereby, generating electricity. The cost unit in case of power house costing can be per lb for steam and per kilowatt or per kilowatt-hour for electricity generation. Various costs are involved in producing steam which acts as a raw material for electricity generation. They are:

1. Coal cost
2. Water softener cost
3. Labour cost
4. Other overhead cost like maintenance and supervision

Even, the cost figures of previous period can be compared with the current period for proper analysis and control while preparing power house operating cost sheet.

**Illustration 5:** From the following cost information, prepare a cost sheet presenting the total cost and cost per unit of electricity generated.

| **Particulars** | **Amount (Rs.)** | **Quantity (lbs/Units)** |
|---|---|---|
| **Expenses for generation of steam:** | | |
| Coal cost | 20,000 | |
| Water cost | 300 | |
| Wages for coal handling | 1,500 | |
| Repair of boiler | 700 | |
| Lubricating oil | 100 | |
| Depreciation of boiler | 1,700 | |
| Supervisory labour | 800 | |
| Total steam produced | | 30,000 lbs |
| Steam used for power generation | | 20,000 lbs |

| Expenses incurred in the power house: | | |
|---|---|---|
| Wages for operator | 2,000 | |
| Depreciation of generator | 1,800 | |
| Repairs | 1,000 | |
| Supervision charges | 1,000 | |
| Electricity generated | | 10,000 Units |

**Solution:**

**M/s. _____ Enterprises**

**Power House Operating Cost Sheet**

**For the year ending 20__**

Steam Produced: 30,000 lbs

Steam Used for Generation of Electricity: 20,000 lbs

Electricity Generated:10,000 Units

| **Steam Production Cost:** | **Amount (Rs.)** | **Cost Per Unit** |
|---|---|---|
| Coal cost | 20,000 | |
| Water cost | 200 | |
| Wages for coal handling | 1,500 | |
| Lubricating oil | 100 | |
| Repair of boiler | 700 | |
| Depreciation of boiler | 1,700 | |
| Supervisory labour | 800 | |
| **Total Steam Production Cost** | 25,000 | 0.833 |
| **Electricity Generation Cost:** | | |
| Cost of steam (0.833 X 20,000) | 16,660 | |
| Wages of operator | 2,000 | |
| Depreciation of generator | 1,800 | |
| Repairs | 1,000 | |
| Supervision charges | 1,000 | |
| **Total Cost** | 22,460 | 2.246 |

## Introduction to Canteen Costing

Another service business using operating costing is canteen service. In this method, the cost relating to various provisions, wages, consumables, and services is collected and presented in canteen operating cost sheet. The total cost is then divided by the number of service units so as to arrive at the cost per service unit. The various service units in case of canteen services are cost per meal, cost per person, cost per dish etc. Such cost per unit helps in setting the selling price and thereby, calculating the profits for the service provider. Canteen services, many-a-times, are provided at subsidised rates which can be adjusted in the operating cost sheet.

### Proforma for Canteen Operating Cost Sheet

The below is the Proforma for the Canteen Operating Cost Sheet:

**M/s. _____ Enterprises**

**Canteen Operating Cost Sheet**

**For the year ending 20__**

| Particulars | Amount (Rs.) | Cost Per Meal |
|---|---|---|
| **Provisions** | | |
| Wheat | | |
| Rice | | |
| Milk | | |
| Biscuits | | |
| Vegetables and Fruits | | |
| Meat, chicken, eggs etc. | | |
| Others | | |
| **Wages** | | |
| Supervisor | | |
| Cleaner | | |
| Chef | | |
| Helper | | |
| Sweeper | | |
| **Consumables** | | |
| Crockery | | |
| Glassware | | |
| Towels | | |
| **Services** | | |
| Gas and electricity | | |
| Lighting | | |
| Water | | |

| | | |
|---|---|---|
| **Miscellaneous**<br>Rent<br>Insurance<br>Total Cost<br>**Less:** Subsidy<br>Net Cost Profit / Loss | | |
| Sales | | |

**Illustration 6:** Prepare the operating cost sheet for the Rajpal caterers handling a canteen business for a school. Following information is given for the month ending September 2014:

| **Particulars** | **Amount (Rs.)** |
|---|---|
| Chef's Salary | 45,000 |
| Assistant to Chef | 20,000 |
| Cleaner | 12,000 |
| Vegetables and Fruits | 16,000 |
| Rice and Wheat | 7,000 |
| Milk | 8,000 |
| Gas Cost | 3,500 |
| Electricity | 2,000 |
| Crockery and Glassware | 1,500 |
| Rent | 5,000 |

School has 250 students and the caterer serves them lunch for 20 days in the month. Also calculate the total cost and cost per meal.

**Solution:**

**Rajpal Caterers**

**Canteen Operating Cost Sheet**

**For the month ending September 2014**

| **Particulars** | Amount (Rs.) | Cost Per Meal |
|---|---|---|
| **Provisions** | | |
| Rice and Wheat | 7,000 | |
| Milk | 8,000 | |
| Vegetables and Fruits | 16,000 | |

| | | |
|---|---|---|
| Total Provisions | 31,000 | 6.2 |
| **Wages** | | |
| Assistant to Chef | 20,000 | |
| Cleaner | 12,000 | |
| Chef's Salary | 45,000 | |
| Total Wages | 77,000 | 15.4 |
| **Consumables** | | |
| Crockery and Glassware | 1,500 | |
| Total Consumables | 1,500 | 0.3 |
| **Services** | | |
| Gas Cost | 3,500 | |
| Electricity | 2,000 | |
| Total Services | 5,500 | 1.1 |
| **Miscellaneous** | | |
| Rent | 5,000 | |
| Total Miscellaneous | 5,000 | 1.0 |
| **Total Cost and Per meal** | 1,20,000 | 24 |

**Working notes:** Total cost units are

Total Meals = 250 Students X 20 Days

= 5,000 meals

## Knowledge Assessment – III

**Fill the blanks with the appropriate answers**

1. Power House Costing is another costing method under _____ which is used for the concerns into producing electricity.
2. The cost unit in case of power house costing can be _____ for generating electricity.
3. Coal cost is a cost that is involved in producing _____.
4. The cost figures of _____ period can be compared with the current period for proper analysis and control while preparing power house operating cost sheet.
5. Costs relating to canteen costing are provisions, wages, _____ and _____.
6. The various service units in canteen services are _____.
7. Chef's cost comes under the category of _____ cost.
8. Canteen services, many-a-times, are provided at _____ rates which can be adjusted in the operating cost sheet.

**[Ans:** 1-Operating costing, 2-Per Kilowatt/Per Kilowatt-hour, 3-Steam, 4-Previous, 5-Consumables and services, 6-Per meal/Per person/Per dish, 7-Wages, 8-Subsidised**]**

## Keywords

- **Services:** The intangible offering by a commercial organization is popularly known as Services.
- **Operating or Service Costing**: Operating costing is concerned with the ascertainment of operating cost for rendering a unit of service.
- **Transport Costing:** Transport costing is the operating costing method used for transport business.
- **Log Sheet:** Log sheet is a tool that provides the information regarding the cost and other data on daily basis regarding the kilometre run, petrol usage, passenger/goods carried etc.
- **Power House Costing:** Power House Costing is another costing method under operating costing which is used for the concerns into producing electricity.
- **Canteen Costing:** Canteen costing is an operating costing method used by the canteen businesses.

## Summary

- Services are the intangible form of product. A service can be internal or external.
- A service undertaking has to opt for a different kind of costing method called as "Operating or Service Costing" which is concerned with the ascertainment of operating cost for rendering a service.
- The service units in case of transport services are cost per kilometre, cost per tonne-km, cost per quintal-km, cost per passenger, cost per passenger-km etc.
- The cost elements under transport costing include standing cost, maintenance cost and running cost.
- The cost unit in case of power house costing can be cost per lb for steam and cost per kilowatt or cost per kilowatt-hour for electricity generation.
- The various service units in case of canteen services are cost per meal, cost per person and cost per dish.

## Exercise Questions

### Short Answer Questions

1. What do you mean by operating costing?
2. Which are the businesses that use operating costing?
3. What do you mean by transport costing method?
4. Which are the service units in case of transport costing?
5. What is the use of daily log sheet?
6. What is the difference between standing charges and running charges?
7. Explain power house costing and canteen costing?

8. Which are service units in case of power house costing and canteen costing?

## Long Answer Questions

1. What do you mean by cost units in operating costing? Describe, in detail, with some relevant examples from service businesses. Also, explain the two different ways of computing composite units?
2. What is operating costing? Explain its importance for fixing selling price for service undertakings?
3. What is a log book? What information is provided by the daily log sheet? Explain the use of log sheets for collation of data for transport costing?
4. What are the various cost components under the transport costing? Explain them with the help of relevant examples?
5. Explain the power house costing with the help of various costs involved in steam and electricity generation business?
6. One of your friend plans to run a canteen in an institute. How should he classify his cost for the purpose of preparing an operating cost statement?

## Numerical Questions

1. The following are the details of tonnes of goods transported by M/s. Raghu Enterprises for the month of January 2015:

| Dates | Tonnes | Kilometre Travelled |
|---|---|---|
| 3rd January 15 | 200 | 30 |
| 12th January 15 | 350 | 80 |
| 16th January 15 | 480 | 40 |
| 20th January 15 | 100 | 25 |
| 29th January 15 | 120 | 50 |

You are required to calculate the cost per tonne-km, if the total cost for the enterprise is Rs. 12,20,000 for the January month.

(**Ans.** Cost per tonne-km = Rs. 19.78 **)**

2. A transport company is running 2 busses between town A and town B which are 100 kms apart. Seating capacity of each bus is 50 passengers. Actual passengers carried were 80% of the seating capacity. Both the busses run for all the days of the month and each bus made one round trip per day. Find out the total passenger kilometre.

(**Ans.** Passenger Kilometre = 4,80,000**)**

3. The Jamshed Transport Co. which has a lorry compiles the following data for the month of April 2014 where the vehicle carried 200 tonne for 500 kms. :

| Particulars | Amount (Rs.) |
|---|---|
| Wages for April | 8,000 |
| Diesel for April | 15,000 |
| Cost of lorry | 3,00,000 |
| Depreciation on lorry | 20% P.A. |
| Repairs for April | 20,000 |
| Garage Rent for April | 5,000 |
| Licence, insurance and taxes for the year | 24,000 |

Prepare operating cost sheet for April showing the fixed, variable and cost per tonne-km for Jamshed Transport Co.

(**Ans.** Total Cost: Rs.55,000, Cost per tonne-km: Rs. 0.55**)**

4. Following were the expenses incurred by a company in operating 2 busses (for the conveyance of staff) and a lorry (for the carrying of raw material) during the month of October 2014:

| Particulars | Bus A | Bus B | Lorry C |
|---|---|---|---|
| Driver's Salary | 1,000 | 1,200 | 1,500 |
| Coolie's Wages | 500 | 500 | 800 |
| Fuel Cost | 2,000 | 3,000 | 3,000 |
| Oil | 200 | 400 | 500 |
| Repair | 1,500 | 1,800 | 2,000 |
| Depreciation | 3,400 | 3,200 | 4,400 |
| Supervision | 700 | 700 | 700 |
| Garage overhead | 1,000 | 1,200 | 800 |
| Road and Taxes | 500 | 500 | 600 |
| Other overheads | 200 | 100 | 400 |

The above vehicles carried the following passengers and raw material for the kilometres mentioned below:

| Vehicle | Load | Kms. |
|---|---|---|
| Bus A | 25 Passenger | 3,000 |
| Bus B | 20 Passenger | 4,000 |
| Lorry C | 30 tonnes | 2,000 |

From the above cost figures and other information, you are required to prepare an operating cost sheet in summary form for three vehicles. In addition, briefly explain the "Unit of Cost' which is to be selected for the above problem.

(**Ans.** Total Cost: Bus A Rs. 11,000, Bus B Rs. 12,600, Lorry C Rs. 14,700, Cost per Unit: Bus A 0.146 per passenger-km , Bus B 0.157 per passenger-km, Lorry C 0.245 per passenger-km**)**

5. A transport service company is running five buses between two towns which are 50 kms apart. Seating capacity of each bus is 50 passengers. The following particulars were obtained from their books:

| **Particulars** | **Amount (Rs.)** |
|---|---|
| Wages of driver, conductors and cleaners | 24,000 |
| Salaries of office staff | 10,000 |
| Diesel oil and other oil | 35,000 |
| Repair and maintenance | 8,000 |
| Taxation, insurance etc. | 16,000 |
| Depreciation | 26,000 |
| Interest and other expenses | 20,000 |

Actually, passengers carried were 75% of seating capacity. All buses ran on all days of the month. Each bus made one round trip per day. Find out the cost per passenger-km.

(**Ans:** Cost per passenger-km = Rs. 0.2471**)**

6. From the data given below for the year 2014-15, prepare a cost sheet showing the cost of electricity generated per unit of kwh by the Kukreja Power Station:

| Total Units Generated : 20,00,000 kwh | |
|---|---|
| **Particulars** | **Amount (Rs.)** |
| Operating Labour | 50,000 |
| Repairs | 50,000 |
| Spares and Stores | 40,000 |
| Plant Supervision | 30,000 |
| Administrative Cost | 20,000 |

Coal consumed per kwh for the year is 2.5 kg @ Rs. 0.02 per kg. Charge depreciation at 5% on capital cost of Rs. 2,00,000.

**(Ans:** Total Cost: Rs. 3,00,000, Cost per kwh: Rs. 0.15**)**

7. Prepare the cost sheet for the Himasth caterers handling a canteen business for a college. Following information are given for the month ending October 2014:

| **Particulars** | **Amount (Rs.)** |
|---|---|
| Chef's Salary | 1,35,000 |
| Assistant to Chef | 50,000 |
| Supervisor's Salary | 15,000 |
| Vegetables, Meat and Fruits | 56,000 |
| Wheat and Rice | 27,000 |
| Milk | 28,000 |
| Lighting and gas | 23,500 |
| Electricity | 14,000 |
| Towels and Crockery | 11,500 |
| Rent and Insurance | 50,000 |

College has 400 students and the caterer serves them lunch and breakfast for 25 days in the month. Calculate total cost and cost per meal.

(**Ans**. total cost = Rs. 4,10,000, Cost per meal = Rs. 20.5**)**

# UNIT - 6

## RECONCILIATION OF COST AND FINANCIAL ACCOUNTS

| Unit Code-6 | UNIT TITLE: RECONCILIATION OF COST AND FINANCIAL ACCOUNTS | | | |
|---|---|---|---|---|
| **Location:** Class Room | **Session-1: Meaning, Need and Causes of Disagreement of Cost Accounts and Financial Accounts** | | | |
| | **Learning Outcome** | **Knowledge Evaluation** | **Performance Evaluation** | **Teaching & Training Method** |
| | 1. Meaning of reconciliation of cost and financial Accounts. | 1. Explain the meaning of Reconciliation of cost and financial Accounts. | 1. Explain the cases, where reconciliation is necessary. | **Interactive Lecture:** Meaning and Need of Reconciliation of Accounts. |
| | 2. Need of Reconciliation of Cost and Financial Accounts. | 2. Mention the name of accounting system in which reconciliation is necessary. | 2. Explain the cases where reconciliation of cost and financial accounts can be avoided. | |
| | 3. Reasons of difference in two sets of books (Cost and financial). | 3. Discuss the reasons of disagreement between cost and financial accounts. | 3. Discuss items which are shown in cost accounts only. | |
| | | 4. Describe the relevance of preparing reconciliation account. | 4. Explain the items which are shown in Financial Accounts only. | |
| | **Session-2: Methods of Reconciliation of Cost Accounts and Financial Accounts Profits** | | | |
| | 1. Methods of preparing reconciliation statement. | 1. Discuss the treatment of over or under absorbed overheads. | 1. Explain the procedure of preparing reconciliation statement and memorandum reconciliation account. | **Interactive Lecture:** Procedure of preparing reconciliation statement. |

| | | | | |
|---|---|---|---|---|
| | 2. Steps required for preparing reconciliation statement.<br><br>3. Procedure of preparing Memorandum Reconciliation Account. | 2. Explain the treatment of the items which are shown in financial accounts only.<br><br>3. Describe the treatment of items which are shown in cost accounts only. | 2. Prepare the proforma of reconciliation statement.<br><br>3. Enumerate the steps required to prepare reconciliation | **Activity:** Collect data from the costing records and financial records of a manufacturing company for preparing reconciliation statement. |

## Learning Objectives

After reading this unit, students will be able to:

- explain the meaning and need of reconciliation of cost accounts and financial accounts;
- identify the reasons of difference between profit disclosed as per cost accounts and financial accounts;
- understand the procedure of preparing a reconciliation statement or memorandum reconciliation account; and
- explain the meaning of certain keywords.

## Session-1: Meaning, Need and causes of Disagreement between Cost Accounts and Financial Accounts

There are two systems of maintaining accounts, namely "Non-Integral System" and "Integral System". Under Non-Integral system two sets of books are maintained, one for cost accounts and other for financial accounts. Profit or loss portrayed by both the books might be different because of dissimilar accounting principles adopted in preparation of accounts. In Non-Integral System need of reconciliation of cost and financial accounts arise while in case of Integral System it is not required. Reconciliation of cost and financial accounts helps in identifying the reasons of disagreement between two set of books.

### Need of Reconciliation of Accounts

Need of reconciliation of accounts occurs due to following reasons:

1. Reconciliation of books identifies the reasons for discrepancy between profits disclosed by cost and financial accounts.
2. It helps in knowing the true profit or loss of the business and also facilitates the manager in right decision making.
3. It assists in checking the arithmetical accuracy of costing accounts. It also helps in coordination and promotion of cost accounting and financial accounting departments.

Reasons of Disagreement between Costing and Financial Profits or Losses

1. Items shown only in financial accounts
2. Items shown only in cost accounts
3. Over-absorbtion or under-absorbtion of overheads
4. Different methods of charging depreciation
5. Different methods of stock valuation
6. Abnormal gains and losses

Due to following reasons difference may arise in costing and financial profit and loss account:

1. **Items shown only in financial accounts:** Following are the items which are shown in the financial accounts only, not considered in the cost accounting. These items are categorized as under:

   **(a) Purely financial charges – examples**

   (i) Loss on sale of capital assets

   (ii) Discount on bonds, debenture etc.

   (iii) Loss on investment

   (iv) Expenses of company's transfer office

   (v) Interest on bank loans and mortgages.

   (vi) Fines and penalties

   (vii) Provision for bad and doubtful debts

   (viii) Damages payable at law

   (ix) Amount written off, goodwill, discount on debentures, preliminary expenses

   (x) Loss due to theft, pilferage, etc.

   **(b) Purely financial incomes – examples**

   (i) Profit arising from sale of capital assets

   (ii) Rent receivable

(iii) Dividend and interest received on investments

(iv) Interest received on bank deposits

(v) Transfer fees received

(vi) Income tax refund

**(c) Appropriations of profit – examples**

(i) Dividend paid

(ii) Transfer to reserves

(iii) Charitable donations

(iv) Income-tax

(v) Any other item which appears in the profit and loss appropriations account.

2. **Items shown only in cost accounts:** Following items are only considered in cost accounts not at all considered in financial accounts.

(i) Notional rent, i.e, charges on owned premises.

(ii) Interest on capital employed.

(iii) Notional salaries

(iv) Depreciation on fully depreciated assets still in use.

3. **Overheads:** Overheads are recorded at predetermined rate in cost accounting while these are recorded at actual rate in financial accounting. This may lead to under or over recovery of overheads and resultant discrepancy in profit according to cost accounting and financial accounting. Under or over recovery of overheads may be treated by carrying it forward to next year or may be charged by a supplementary rate or transferred to costing profit and loss account.

4. **Stock Valuation:** In financial accounting**,** stocks are valued at cost or market price (whichever is less) while in cost accounting it is calculated on the basis of FIFO, LIFO methods. This may also lead to difference in the amount of profit according to financial accounts and cost accounts.

5. **Depreciation:** Various methods of charging depreciation are available in accounting and there is possibility of using a different method of charging depreciation in cost and financial accounts. Therefore, the amount of depreciation might be different according to the method used. For example; depreciation is charged according to straight line method in financial accounting while in cost accounting machine hour rate method might be used.

6. **Abnormal Gains and Losses:** Abnormal gains or losses might not be considered in cost accounts or it may be transferred to costing profit and loss account. But in financial accounts these will be recorded in profit and loss account. If it is not recorded in cost account then discrepancy in profit and loss according to costing and financial accounts will occur while the later case when it is transferred to costing profit and loss account; no difference will happen in the costing and financial records. Therefore, no adjustment will be required.

## Knowledge Assessment-I

**State with reasons whether following is True (T) or False (F):**

1. Reconciliation of costing and financial accounts is not required in integral costing system.
2. Loss on sale of furniture does not make any impact on profits as per financial accounting.
3. Interest on investments is purely financial in nature and will distinguish the costing and financial profits.
4. Transfer to General Reserve is an item of cost accounts.
5. Reconciliation statement helps in knowing the true profit and loss of the business and also helps in right decision making.
6. Under Non–integrated system of accounting, both cost accounts and financial Accounts are maintained separately
7. Notional cost decreases costing profit
8. Under valuation of closing stock in costing reduces costing profit
9. Difference in the amount of Depreciation in costing and financial accounting distinguishes Costing profit from financing profit.
10. Dividend received increases financial profit.

**[Ans:** 1(T), 2(F), 3(T), 4(F), 5(T), 6(T), 7(T), 8(T), 9(T), 10(T)**]**

## Session-2: Methods of Reconciliation of Costing and Financial Profit

Two methods of reconciliation of cost and financial accounts are available namely i.e., Reconciliation statement or a Memorandum Reconciliation Account. Although, profit from any set of book can be taken as base (cost or financial) for preparing reconciliation statement.

### Methods of Reconciliation of Cost and Financial Accounts

- Reconciliation Statement
- Memorandum Reconciliation Account

### Procedure of Preparing Reconciliation Statement or Memorandum Account

A reconciliation statement or a memorandum reconciliation account should be drawn up for reconciling profits shown by the two sets of books. Results shown by any sets of books may be taken as the base and necessary adjustments should be made to arrive at the results shown by the other set of books. The technique of preparing a reconciliation statement as well as a memorandum reconciliation account is discussed below:

## Preparation of Reconciliation Statement

The preparation of reconciliation statement involves the following steps:

1. Profit as per any set of books (cost or financial) may be taken as the base. This is, as a matter of fact, the starting point for determining the profit as shown by the other set of books after making suitable adjustments taking into consideration the causes of difference.
2. The effect of the particular cause of difference should be studied on the profit shown by the other set of books.
3. In case the cause has resulted in an increase in the profit shown by other set of books, the amount of such increase should be added to the profit as per the former set of books which has been taken as the base.
4. In case the cause has resulted in a decrease in the profit shown by other set of books, the amount of such decrease should be subtracted from the profit as per the former set of books which has been taken as the base.

**Example**

| Particulars | Amount (Rs.) |
|---|---|
| Profit as per cost account | 10,000 |
| Works overheads under-recovered in cost accounts | 500 |
| Interest on capital included in financial accounts | 500 |
| Dividend received | 1,000 |
| Rent for owned building charged in cost accounts | 300 |
| Profit as per financial books | 10,300 |

There is a difference of Rs. 300 between the profit as shown by the financial books and the profit as shown by the cost books. A reconciliation statement can be prepared to reconcile, on the following basis, profits shown by the two sets of books.

1. Profit as per cost accounts may be taken as the base. In other words, the profit as shown by the financial books can be found if suitable adjustments are made in this figure of profit after taking into account the above causes of difference.
2. Works overheads have been charged more in financial accounts than those in cost accounts.This means profit as shown by the financial accounts is less than the profit as shown by the cost accounts by Rs. 500 (the amount of under recovery). Since profit as per cost accounts has been taken as the base, the amount of Rs. 500 should be subtracted from this base profit to arrive at the profit as shown by the financial accounts.
3. The inclusion of interest on capital as an expense has resulted in decrease in profits as shown by financial books. In other words, the profit as shown by the cost books is more than the profit shown the financial books by Rs. 500 (the amount of interest). The amount should, therefore, be subtracted from the base profit.
4. No charge is made in financial books for rent on owned buildings. The amount has, however, been charged in the cost books. It means the profit as shown by the financial

books is higher than the profit as shown by the cost books by this amount. The amount, therefore, should be added to the profit as shown by the cost books.

5. No charge is made in financial books for rent on owned buildings. The amount has however, been charged in the cost books. It means the profit shown by the financial books is higher than the profit as shown by the cost books by this amount. The amount, therefore, should be added to the profit as shown by the cost books.

The reconciliation statement may now be conveniently presented in the following form:

| **Particulars** | + (Rs.) | -(Rs.) |
|---|---|---|
| Profit as per cost accounts | 10,000 | |
| **Less:** Works overheads under-charged in cost accounts<br>Interest on capital included in financial accounts | | 500<br>500 |
| **Add:** Dividend received<br>Rent on owned buildings | 1,000<br>300 | |
| | 11,300 | 1,000 |
| **Profit as per financial accounts** | 10,300 | |

In case, in the above example, the cost accounts show a loss of Rs. 10,000 instead of a profit, the amount of loss should be put in 'minus' column. The reconciliation statement should then be prepared on the same pattern as if there is a profit instead of there being a loss.

## Preparation of Memorandum Reconciliation Account

Memorandum Reconciliation Account is similar to Reconciliation statement. Difference is of preparation style only. Memorandum Reconciliation Account is prepared in the accounting format using Debit (Dr.) and Credit(Cr.). All reasons of difference which are to be added should be credited while all items to be deducted should be debited. Account would be initiated with Profit as per cost accounts. The balance figure will reveal the profit as per financial accounting.

**Proforma - Memorandum Reconciliation Account**

| | | | |
|---|---|---|---|
| To, All items which are to be deducted | ———— | By, Profit as per costing | —— |
| To, Profit as per financial records | | By, All items which are to be added | ——— |

**Illustration 1:** Rainbow manufacturing company provided the following information to mitigate the discrepancy of financial and costing profits. Prepare a reconciliation statement from the following information:

| Particulars | Amount (Rs.) |
|---|---|
| Net profit as per financial records | 72,760 |
| Net profit as per costing records | 76,800 |
| Factory overheads under-recovered in costing | 6,700 |
| Administration expenses charged in excess | 5,300 |
| Depreciation charged according to financial records | 5,660 |
| Depreciation recovered according to costing records | 5,950 |
| Interest received on loan provided | 720 |
| Income tax provided in financial records | 800 |
| Dividend received credited in financial books | 510 |
| Store adjustment (Credited in financial books) | 840 |
| Depreciation of stock charged in financial accounts | 1260 |
| Divided proposed in financial accounts | 2400 |
| Abnormal loss due to theft and pilferage provided only in financial books | 540 |

**Solution:**

| Particulars | Amount (Rs.) | Amount (Rs.) |
|---|---|---|
| Profit as per costing books | | 76,800 |
| **Add:** Administration expenses charged in excess | 5,300 | |
| Depreciation overcharged in costing books (5,950-5,660) | 290 | |
| Interest received on loan provided | 720 | |
| Bank interest received credited in financial books | 510 | |
| Store adjustment (Credited in financial books) | 840 | 7,660 |
| **Less:** Factory overheads under-recovered in costing | 6,700 | 84,460 |
| Income tax provided in financial records | 800 | |
| Divided proposed in financial accounts | 2,400 | |
| Depreciation of stock charged in financial accounts | 1,260 | |
| Abnormal loss due to theft and pilferage provided only in financial books | 540 | 11,700 |
| **Profit as per financial records** | | **72,760** |

**Illustration 2:** From the following figures, prepare a reconciliation statement.

| Particulars | Cost Accounts Amount (Rs.) | Financial Accounts Amount (Rs.) |
|---|---|---|
| Net Profit | 70,000 | |
| Selling and promotion overheads | 6,100 | 6,100 |
| Provision for doubtful debts | - | 4,000 |
| Factory indirect expenses | 8,500 | 7,000 |
| Director's remuneration | - | 4,000 |
| Income-tax paid | | 18,500 |
| Rent received from own building | 5,500 | - |
| Depreciation charged | 9,100 | 11,900 |
| Dividend received | - | 1,100 |
| Administrative overheads | 4,900 | 7,800 |

**Solution:** **Reconciliation Statement**

| Particulars | Items to be added | Items to deducted |
|---|---|---|
| Profit as per Costing Account | 70,000 | |
| **Add:** Factory indirect expenses over-absorbed (8,500-7,000) | 1,500 | |
| Rent received from own building | 5,500 | |
| Dividend received | 1,100 | |
| **Less:** Provision for doubtful debts | | 4,000 |
| Director's remuneration | | 4,000 |
| Income-tax paid | | 18,500 |
| Depreciation under-charged (11,900-9100) | | 2,800 |
| Administrative overheads (7,800-4900) | | 2,900 |
| | | 32,200 |
| Profit as per financial accounts | | 45,90 |
| | **78,100** | **78,100** |

**Illustration 3:** Rego manufacturers of machine spare parts produce two categories X and Y. The following data refer to the year ended on 31st March 2014:

| **Particulars** | **Category X** | **Category Y** |
|---|---|---|
| Units produced | 250 | 800 |
| Units sold | 240 | 720 |
| | Rs. | Rs. |
| Wages paid per unit | 38 | 28 |
| Material cost per unit | 12 | 10 |
| Selling price per unit | 130 | 100 |

All expenses other than wages and materials are analyzed under 'Work Overheads' which during the year amounted to Rs. 26, 500 and 'office overheads' which amounted to Rs. 13,500.

In fixing the selling price, it was estimated that works overhead should be taken at 50% on wages and office expenses at 25% on works cost.

Calculate the total cost per unit on the basis of the given overhead percentages. Also determine the net profit for the year shown by financial accounts.Unsold stock is to be valued at actual material and wages cost plus works overhead at 50% on wages. Prepare reconciliation statement for matching the costing and financial profits.

**Solution:**

| **Particulars** | **Category X (in Rs.)** | **Category Y (in Rs.)** |
|---|---|---|
| Materials | 12.00 | 10.00 |
| Wages | 38.00 | 28.00 |
| **Prime Cost** | **50.00** | **38.00** |
| Works overhead (50% of Wages) | 19.00 | 14.00 |
| **Works Cost** | **69.00** | **52.00** |
| Office overheads (25% of works cost) | 17.25 | 13.00 |
| Total cost per unit | 86.25 | 65.00 |

**Statement of Profit as per Cost Accounts**

| **Particulars** | **Category X (in Rs.)** | **Category Y (in Rs.)** |
|---|---|---|
| Total cost of production | | |
| **Category X:** 250 units @ Rs. 86.25 per unit | 21,562.5 | |
| **Category Y:** 800 units @ Rs. 65 per unit | | 52,000 |
| Less: Stock Unsold | | |
| **Category X:** 10 units @ Rs. 86.25 per unit | 862.50 | |

| | | |
|---|---|---|
| **Category Y:** 800 units @ Rs. 65 per unit | | 5,200 |
| Cost of Goods Sold | 20,700 | 46,800 |
| **Profit** | **10,500** | **25,200** |
| Selling Price:<br>**Category X:** 240 units @ Rs. 130 per unit<br>**Category Y:** 720 units @ Rs. 100 per unit | 31,200 | <br><br>72,000 |

**Profit and Loss Account for the Period.....**

| | | | | | |
|---|---|---|---|---|---|
| To Materials | | | By Sales | | |
| Category X | 3,000 | | Category X | 31,200 | |
| Category Y | 8,000 | 11,000 | Category Y | 72,000 | 1,03,200 |
| To Wages | | | By Stock unsold (valued at | | |
| Category X | 9,500 | | works cost) | | |
| Category Y | 22,400 | 31,900 | X: 10 units x Rs. 69 = | 690 | |
| To Work Expenses | | 13,500 | Y: 80 units x Rs. 5= | 4,160 | 4,850 |
| To Office Expenses | | 26,500 | | | |
| To Net Profit | | 25,150 | | | |
| | | **1,08,050** | | | **1,08,050** |

**Reconciliation Statement**

| **Particulars** | **Items to be added** | **Items to be deducted** |
|---|---|---|
| Profit as per cost account<br>**Add:** Over-recovery of office overheads in cost account(14,712.50 – 13,500) | 35,700.00<br>1212.50 | |
| **Less:** Under-recovery of work overheads (Rs. 26,500 – 15,950)<br>Over-valuation of closing stock in cost account<br>X (862.50 -690) = 172.50<br>Y (5,200 – 4,160) = 1,040.50 | | 10,550<br><br><br>1212.50 |
| Profit as per Financial Records | | 25,150 |
| | **36,912.50** | **36,912.50** |

**Illustration 4:** Following is a summary of the trading and profit and loss account of a manufacturing company for the year ended on 31st March, 2014:

(Amount in Rs. '000)

| | | | |
|---|---|---|---|
| To Materials | 3,750 | By Sales | |
| To Wages Paid | 1,800 | (1,50,000 units) | 7,500 |
| To Factory Overheads | 910 | By Finished Stock | |
| To Administrative Expenses | 522 | (4,000 units) | 160 |
| To Selling Expenses | 550 | By Work-in-progress: | |
| To, Preliminary Expenses (Written off) | 40 | Material 64<br>Wages 36 | |
| To Goodwill (Written off) | 30 | Factory expenses 20 | 120 |
| To Net Profit | 206 | By Dividend Received | 28 |
| | **7,808** | | **7,808** |

The following costs have been allocated in cost accounts:

1. Factory overheads are equal to 20% of prime cost.
2. Administrative overheads are charged at Rs. 3 per unit of production.
3. Selling and distribution expenses are charged at Rs. 4 per unit of sales.

You are required to prepare a costing profit and loss account of the company and also prepare the reconciliation statement for matching the profit shown by costing and financial records.

**Solution:**

**Costing Profit and Loss Statement for the 31.03.2014** (Amount Rs. '000)

| | | | |
|---|---|---|---|
| Materials | | | 3,750 |
| Wages | | | 1,800 |
| **Prime Cost** | | | 5,550 |
| Factory Overheads (20% of prime cost) | | | 1,110 |
| **Total Works Cost Less:** | | | 6,660 |
| Closing Work-in-Progress | Material | 64 | |
| | Wages | 36 | |
| | Factory Overheads | 20 | 120 |
| **Works cost (Completed units)** | | | 6,540 |
| **Add:** Administrative Overheads i.e (1,50,000 sold units + 4,000 units Closing Stock) 1,54,000 @ 3 per unit | | | 462 |
| **Cost of Production** | | | 7,002 |
| **Less:** Closing Stock of Finished Goods | $\frac{7,002}{1,54,000} \times 4,000$ | | 182 |

| | |
|---|---|
| **Cost of Goods Sold** | 6,820 |
| **Add:** Selling and Distribution Expenses (1,50,000 units @ Rs. 4 per unit) | 600 |
| Cost of Sales | 7,420 |
| **Profit** | 80 |
| Sales | 7,500 |

**Reconciliation Statement**

| | | |
|---|---|---|
| Profit as per Costing Records | | 80 |
| **Add:** Factory overheads over-absorbed (1,110 – 910) | 200 | |
| Selling expenses over recovered (600 – 550) | 50 | |
| Dividend received | 28 | 278 |
| | | 358 |
| **Less:** Administrative overheads under-absorbed (522-462) | 60 | |
| Preliminary expenses (written off) | 40 | |
| Goodwill (Written off) | 30 | |
| Difference in finished stock | 22 | 152 |
| Profit as per Financial Records | | 206 |

**Illustration 5 :** A manufacturing company disclosed a net loss of Rs. 3,47,000 as per their cost accounts for the year ended March 31, 2013. The financial accounts however disclosed a net loss of Rs. 5,10,000 for the same period. The following information was revealed as a result of scrutiny of the figures of both the sets of accounts:

| S.No. | Particulars | Amount (Rs.) |
|---|---|---|
| 1 | Factory overheads under-absorbed | 40,000 |
| 2 | Administration overheads over-absorbed | 60,000 |
| 3 | Depreciation charged in financial accounts | 3,25,000 |
| 4 | Depreciation charged in cost accounts | 2,75,000 |
| 5 | Interest on investments not included in cost accounts | 96,000 |
| 6 | Income-tax provided | 54,000 |
| 7 | Interest on loan funds in financial accounts | 2,45,000 |
| 8 | Transfer fees (credit in financial books) | 24,000 |
| 9 | Store adjustment (credit in financial books) | 14,000 |
| 10 | Dividend received | 32,000 |

Prepare a Memorandum Reconciliation Account

**Solution:**

**Memorandum Reconciliation Account**

| | | | |
|---|---|---|---|
| To Net loss as per cost accounts | 3,47,000 | By Administration overheads over-absorbed | 60,000 |
| To Depreciation under-charged in cost accounts | 50,000 | By Interest on investments in financial account only | 96,000 |
| To Factory overheads under-absorbed | 40,000 | By Dividend received | 32,000 |
| To Income-tax not provided in costing | 54,000 | By Store adjustment | 14,000 |
| | | By Transfer fees | 24,000 |
| To Interest on loan funds not charged in costing | 2,45,000 | By Net loss as per financial accounts | 5,10,000 |
| | **7,36,000** | | **7,36,000** |

**Illustration 6:** Prepare a Memorandum Reconciliation Account from the following details:

Profit as per cost accounts were Rs. 59,700 while the profits as per financial accounts were Rs. 60,000. The values of opening and closing stocks as shown in cost accounts and financial accounts were as under:

| **Particulars** | **Financial Accounts** | **Cost Accounts** |
|---|---|---|
| **Raw Materials:** | | |
| Opening Stock | 25,000 | 25,300 |
| Closing Stock | 30,000 | 29,600 |
| **Work-in-progress:** | | |
| Opening Stock | 16,000 | 15,500 |
| Closing Stock | 20,000 | 19,900 |

**Solution:**

**Memorandum Reconciliation Account**

| | | | |
|---|---|---|---|
| To under-valuation of opening stock of work-in-progress | 500 | By Profit as per cost account | 59,700 |
| | | By over-valuation of opening stock of materials in cost account | 300 |
| To Profit as per financial Accounts | 60,000 | By under valuation of closing stock of material in cost account | 400 |
| | | By under valuation of closing stock of WIP | 100 |
| | **60,500** | | **60,500** |

## Knowledge Assessment - II

### Multiple Choice Questions

**1. Which of the following subsidiary ledger is maintained in cost accounts:**

a Debtor ledger

b Creditor ledger

c Work-in-Progress

d None of the above

**2. The reasons for the difference in cost and financial accounts may be grouped under:**

a Purely labour items

b Purely material items

c Purely financial items

d Appropriation of profit

e Purely balance sheet items

f Items appearing only in cost accounts

g Items treated differently in cost accounts

**3. Which of the following is the method of reconciliation of costing and financial profits:**

a Memorandum Reconciliation Account

b Income Statement

c Contribution Approach

d None of these

**4. Premium on issue of shares is**

a Shown in costing profit and loss A/c

b Shown in financial profit and loss A/c

c None of the above

d a and b both

**5. Notional rent is considered in which of the following A/c**

a Cost A/c

b Financial A/c

c Balance sheet

d None of the above

**6. Excess of overheads in costing as compared to financial profit and loss A/c is**

a Over absorption of overheads

b Under absorption of overheads

c None of the above

d Both (a and b)

**7. Interest received on investment will be treated as**

a Credited in costing P & L A/c

b Debited in costing P & L A/c

c Credited in financial P & L A/c

d Debited in Financial P & L A/c

**8. Dividend paid on share capital is**

a Debited to costing P & L A/c

b Credited to costing P & L A/c

c Debited to financial P & L A/c

d Credited to financial P & L A/c

**9. Under valuation of opening stock in costing**

a Increases costing profit

b Decreases costing profit

c Decreases financial profit

d None of the above

**10. Payment of donations is**

a Debited to costing P & L A/c

b Credited in costing

c Debited to financial P & L A/c

d None of the above

**[Ans:** 1 (c), 2(c, d, f, g), 3(a), 4(b), 5(a), 6(a), 7(c), 8(c), 9(a), 10(c)**]**

## Keywords

- **Reconciliation Statement:** It is prepared to find out the causes of disagreement between profits shown by cost accounts and financial accounts.
- **Memorandum Reconciliation Account:** It is a reconciliation statement which is prepared in the form of an account.

## Summary

- When cost accounts and financial accounts are separately maintained in two different sets of books, a need occurs for reconciliation of costing profit and financial profit.
- Reconciliation Statement discloses the causes of disagreement between profits shown by cost accounts and financial accounts.
- It also helps in checking arithmetical accuracy of costing data.
- Main reasons of difference in profit or loss cost and financial accounts are:
  a) Items shown only in financial accounts.
  b) Items shown only in cost accounts.
  c) Over and under absorption of overheads.
  d) Difference in stock valuation methods.
  e) Difference in rates and methods of charging depreciation.
  f) Abnormal gain or loss.
- Memorandum Reconciliation Account is a reconciliation statement which is prepared in the form of an account. It is known as 'Memorandum Reconciliation Account'.

## Exercise Questions

### Short Answer Questions

1. What do you mean by 'Non-Integral System' of maintaining records?
2. What is Reconciliation Statement?
3. Why costing profit differs from financial profit? Mention any three reasons.
4. What is over- absorption of overheads?
5. What is under- absorption of overheads?
6. Differentiate Memorandum of Reconciliation Account and Reconciliation Statement.
7. Explain 'Integral' System of maintaining costing records.

### Long Answer Questions

1. What do you mean by Reconciliation Statement? Explain the need of preparing the same. Also highlight the reasons of difference in costing profits and profits as per financial records.
2. Why is reconciliation of cost and financial account necessary? Under what circumstances a reconciliation statement can be avoided.
3. List down the items, either debit or credit, which appear in the financial accounts only.
4. Explain the procedure of preparing Reconciliation Statement.

5. Prepare proforma of 'Reconciliation Statement'.

6. "Reconciliation of cost and financial accounts in the modern computer age is redundant". Comment

7. There is generally divergence between 'financial profits' and 'cost profits'. Explain the statement and give reasons for such divergence.

## Numerical Questions

1. Savoy manufacturing concern presented following information to prepare a Reconciliation Statement:

**(Amount in Rs.)**

| **Particulars** | **Costing Records** | **Financial Records** |
|---|---|---|
| Advertisement Expenses | 10,000 | 10,000 |
| Provision for Discount on Debtors | - | 5,000 |
| Factory Expenses | 7,500 | 6,000 |
| Senior Manager's Salary | - | 2,000 |
| Income tax paid | - | 15,000 |
| Rent of own premises | 6,000 | - |
| Depreciation charged | 13,250 | 14,000 |
| Share transfer fee (cr.) | - | 1,000 |
| Administrative overheads | 4,200 | 7,200 |
| Profit | 50,000 | - |

**[Ans:** Profit as per financial records Rs. 32,750**]**

2. The financial books of a company show a net profit of Rs. l,27,560 for the year ending 31st December, 2014. The Cost Account shows a net profit of Rs. 1,33,520 for the same corresponding period. The following facts are brought to light:

| | |
|---|---|
| Factory overhead under recovered in cost accounts | 11,400 |
| Administration overhead over recovered in cost accounts | 8,500 |
| Depreciation charged in financial accounts | 7,320 |
| Depreciation recovered in cost accounts | 7,900 |
| Interest received but not included in cost accounts | 900 |

| | |
|---|---|
| Income tax debited in financial accounts | 1,200 |
| Bank interest credited financial accounts | 460 |
| Stores adjustment credited in financial accounts | 840 |
| Rent charged in financial accounts | 1,720 |
| Dividend paid recorded in financial accounts | 2,400 |
| Loss of obsolescence charged in financial accounts | 520 |

**[Ans:** Profit as per financial accounts 1,27,560]

3. Vista manufacturing company has shown the profit of Rs. 1,50,000 as per the cost accounts. With the help of given information prepare a reconciliation statement to match the profit as cost and financial records.

| | **Costing Records (in Rs.)** | **Financial Records (in Rs.)** |
|---|---|---|
| (a) Inventory (Opening): | | |
| Materials | 10,000 | 15,000 |
| Finished goods | 18,000 | 16,000 |
| (b) Inventory (Closing): | | |
| Materials | 12,000 | 13,000 |
| Finished goods | 20,000 | 17,000 |
| (c) Write off: legal charges for starting the business Rs. 500 ; Goodwill Rs. 1,500 | | |
| (d) Interest on deposits in bank received Rs. 1,000 | | |
| (e) Indirect expenses charged in the financial accounts Rs. 80.000 but Rs. 75,000 recovered in cost account | | |
| (f) Commission charged but not paid Rs. 10,000. | | |

**[Ans:** Profits as per financial records Rs. 1,49,500]

4. Harish Ltd., has furnished you the following information from the financial books for the year ended 30th June, 2013:

**Profit and Loss Account (ended 30th June, 2013)**

| **Particulars** | **Amount (in Rs.)** | **Particulars** | **Amount (in Rs.)** |
|---|---|---|---|
| To Purchases | 1,26,050 | By Sales (25000 units at Rs.15) | 3,75,000 |
| To Direct Wages | 52,500 | By Rent Received | 1,300 |

| | | | |
|---|---|---|---|
| To Factory Overheads | 60,650 | By Profit on sale of investment | 700 |
| To Office & Administrative Overheads | 26,700 | By Closing Stock | 20,400 |
| To Depreciation | 5,500 | | |
| To Selling Expenses | 35,500 | | |
| To Net Profit | 1,01,400 | | |
| | **4,08,400** | | **4,08,400** |

The cost sheet shows the costing profit of Rs. 98, 850 and closing stock of Rs. 21,400. The factory overheads are absorbed at 100% of direct wages and Office and Administrative overheads are charged at Rs. 1 per unit. Selling expenses are charged at 10% of Gross of sales. Depreciation in cost account absorbed was Rs. 4,000. You are required to prepare:

(1) A statement showing as per cost account for the year ended 30th June, 2013.

(2) Statement showing the reconciliation of profit disclosed in cost accounts with the profit shown in the financial accounts.

**[Ans:** Profit as per cost accounts Rs. 98,850, Profit as per financial accounts Rs. 1,01,500**]**

5. Impex manufacturing company disclosed following information at the end of the year 2013:

Net profit at Rs. 11,57,550 as per the financial records

Net profit of Rs. 17,24,000 as per costing records.

Additional information after going through the both sets of books accountant found the following discrepancies.

| | |
|---|---|
| Loss due to obsolescence charged in accounts | 57,000 |
| Commission paid in financial books | 2,500 |
| Depreciation charged in financial accounts | 1,12,000 |
| Under absorption of factory expenses | 31,200 |
| Over recovery of administrative overheads | 17,000 |
| Interest on investments not included in costs | 80,000 |
| Income tax provided in financial accounts | 4,03,000 |
| Stores adjustments (credit in financial books) | 4,750 |
| Loss due to depreciation in stock value (charged in financial accounts) | |

Using the above mentioned information prepare Reconciliation Statement and Memorandum Reconciliation Account.

6. In reconciliation between cost and financial accounts one of the areas of differences is different method of stock valuation. State in each of the following circumstances, whether costing profit will be higher or lower than the financial profit.

| **Items of Stocks** | **Cost Valuation (in Rs.)** | **Financial Valuation (in Rs.)** |
|---|---|---|
| Raw Material (Opening) | 50,000 | 60,000 |
| Work-in-Progress (Closing) | 60,000 | 50,000 |
| Finished Goods (Closing) | 50,000 | 60,000 |

**[Ans:** (i) Costing profit will be higher by Rs. 10,000, (ii) Costing profit will be higher by Rs. 10,000, (iii) Costing profit will be lower by Rs. 10,000]

7. In a factory, work overheads are absorbed at 60% of works cost. Prepare (i) Cost sheet, (ii) Trading and Profit and Loss Account and (iii) Reconciliation statement if total expenditure consists of Materials Rs. 2,00,000; Wages Rs. 1,50,000; Factory Expenses Rs. 1,00,000 and Office Expenses Rs. 85,000.

10% of output is closing stock and sales are Rs. 5,20,000.

**[Ans:** Costing ProfitsRs. 44,800, Financial Profits Rs. 30,000**]**

8. AVS Ltd., made a Net Profit of Rs. 5,71,000 during the year 2000 as per the their financial system. Whereas their cost accounts disclosed a profit of Rs. 7,77,200. On reconciliation, the following differences were noticed :

(1) Directors fees charged in financial account, but not in cost account Rs. 13,000.

(2) Bank interest credited in financial account, but not in cost account Rs. 600.

(3) Income Tax charged in financial account, but not in cost account Rs. 1,66,000.

(4) Bad and doubtful debts written off Rs. 11,400 in financial accounts.

(5) Overheads charged in costing books Rs. 1,70,000 but actual were Rs. 1,66,400.

(6) 54,000Loss on sale of old machinery Rs.20,000 charged in financial accounts.

## Suggested Readings:


- Cost Accounting: Theory and Problems, Maheshwari and Mittal, 26th edition, Mahavir Publication.
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