INTERMEDIATE

Paper 8

COST ACCOUNTING

Study Notes

SYLLABUS 2022

The Institute of Cost Accountants of India

CMA Bhawan, 12, Sudder Street, Kolkata - 700 016

www.icmai.in

First Edition : August 2022
Revised Edition : February 2024
Revised Edition : October 2024
Reprint : January 2026

Price: ₹ 600.00

Published by :

Directorate of Studies
The Institute of Cost Accountants of India
CMA Bhawan, 12, Sudder Street, Kolkata - 700 016
studies@icmai.in

Printed at:

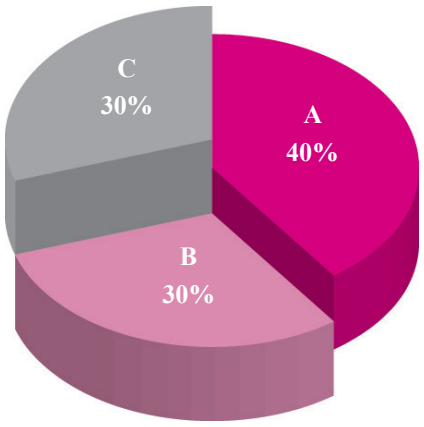
M/s. Print Plus Pvt. Ltd.
212, Swastik Chambers
S. T. Road, Chembur
Mumbai - 400 071

PAPER 8 : COST ACCOUNTING

Syllabus Structure:

The syllabus comprises the following topics and study weightage:

Module No.	Module Description	Weight
	Section A: Introduction to Cost Accounting	**40%**
1	Introduction to Cost Accounting	**5%**
2	Cost Ascertainment – Elements of Cost	**15%**
3	Cost Accounting Standards (CAS 1 to CAS 24)	**10%**
4	Cost Book Keeping	**10%**
	Section B: Methods of Costing	**30%**
5	Methods of Costing	**30%**
	Section C: Cost Accounting Techniques	**30%**
6	Cost Accounting Techniques	**30%**



Learning Environment – Paper 8

Subject Title	**COST ACCOUNTING**
Subject Code	**CA**
Paper No.	**8**
Course Description	The subject, Cost Accounting, introduces the fundamental concepts of cost, cost accounting and costing and carefully builds up a detail understanding of various elements of costs and the techniques for ascertainment, controlling and monitoring of costs. It also highlights different industry specific costing methods to accumulate total costs with due compliance of the Cost Accounting Standards that provide the framework for such tasks. The subject also focuses on the details of alternative cost bookkeeping processes, integration or reconciliation with financial accounting system used in organisations. It enumerates various techniques of costing to facilitate managerial decision making on cost optimisation, profit planning and control.
CMA Course Learning Objectives (CMLOs)	1. Interpret and appreciate emerging national and global concerns affecting organisations and be in a state of readiness for business management. a. Identify emerging national and global forces responsible for enhanced/varied business challenges. b. Assess how far these forces pose threats to the status-quo and creating new opportunities. c. Find out ways and means to convert challenges into opportunities. 2. Acquire skill sets for critical thinking, analyses and evaluations, comprehension, syntheses, and applications for optimization of sustainable goals. a. Be equipped with the appropriate tools for analyses of business risks and hurdles. b. Learn to apply tools and systems for evaluation of decision alternatives with a 360-degree approach. c. Develop solutions through critical thinking to optimize sustainable goals. 3. Develop an understanding of strategic, financial, cost and risk-enabled performance management in a dynamic business environment. a. Study the impacts of dynamic business environment on existing business strategies. b. Learn to adopt, adapt and innovate financial, cost and operating strategies to cope up with the dynamic business environment. c. Come up with strategies and tactics that create sustainable competitive advantages. 4. Learn to design the optimal approach for management of legal, institutional, regulatory and ESG frameworks, stakeholders' dynamics; monitoring, control, and reporting with application-oriented knowledge. a. Develop an understanding of the legal, institutional and regulatory and ESG frameworks within which a firm operates. b. Learn to articulate optimal responses to the changes in the above frameworks. c. Appreciate stakeholders' dynamics and expectations, and develop appropriate reporting mechanisms to address their concerns. 5. Prepare to adopt an integrated cross functional approach for decision management and execution with cost leadership, optimized value creations and deliveries. a. Acquire knowledge of cross functional tools for decision management.

	b. Take an industry specific approach towards cost optimization, and control to achieve sustainable cost leadership. c. Attain exclusive knowledge of data science and engineering to analyze and create value.
Subject Learning Objectives [SLOB(s)]	1. To develop a detail understanding of the fundamental concepts associated with cost and costing under the broader domain of Cost Accounting Standards. (CMLO 2a, 3a, 5a) 2. To attain in-depth knowledge about element-wise cost ascertainment with a detail coverage of inventory management and control and apportionment of overheads costs. (CMLO 2b 5b) 3. To obtain a detail understanding of the framework suggested by Cost Accounting Standards for cost ascertainment, cost accounting and reporting. (CMLO 4a, b, c) 4. To provide a conceptual framework of the cost record keeping and its integration with financial accounting (CMLO 4a) 5. To appreciate various cost accumulation processes designed with due consideration to the nature of output. (CMLO 3b) 6. To attain adequate knowledge to apply costing techniques in decision management and appreciate control techniques for cost optimization. (CMLO 3c, 5b)
Subject Learning Outcome [SLOC(s)] and Application Skill [APS]	**SLOC(s)** 1. Students would be able to ascertain costs elementwise and then perform accumulation of costs following the appropriate costing technique within a given organisational set-up. 2. Students would be able to attain abilities to maintain cost records and perform accounting as per the policies adopted by the organisation and in compliance with the framework suggested by Cost Accounting Standards. 3. They will accomplish abilities to appropriately advise and guide the leadership team for informed judgement, taking and executing decisions by providing necessary inputs through comparative analyses of alternative courses of action. 4. They will attain skills to apply tools such as standard costing and budgetary controls to pinpoint the areas of inefficiency and guide management to take appropriate corrective actions. **APS** 1. Students will be able to determine the total cost of a product or service by applying appropriate costing technique. 2. They will perform cost bookkeeping as per the policy adopted by the firm and in compliance with relevant standards. 3. They will prepare customised reports through evaluation of alternative courses of actions and present the same for final decision by management. 4. They will maintain necessary records and reports to ensure compliance with the provisions of relevant Cost Accounting Standards. 5. Students will be equipped to apply several tools for monitoring and controlling product and service costs and enable management to take corrective actions. .

Module wise Mapping of SLOB(s)			
Module No.	**Topics**	**Additional Resources (Research Paper, Books, Case Studies, Blogs etc.)**	**SLOB Mapped**
1	**Introduction to Cost Accounting**	Introduction to Management and Cost Accounting - Colin Drury (8th edition) Part One (Unit One) https://books.google.co.in/books	To develop a detail understanding of the fundamental concepts associated with cost and costing under the broader domain of Cost Accounting Standards.
2	**Cost Ascertainment – Elements of Cost**	Generally accepted cost accounting principles. https://icmai.in/upload/CASB/2015/GACAP-Final.pdf	To attain in-depth knowledge about element-wise cost ascertainment with a detail coverage of inventory management and control and apportionment of overheads costs.
3	**Cost Accounting Standards**	https://icmai.in/CASB/casb-about.php (ICAI resources available in the website). https://icmai.in/upload/CASB/2015/GACAP-Final.pdf (ICAI resources available in the website).	To obtain a detail understanding of the framework suggested by Cost Accounting Standards for cost ascertainment, cost accounting and reporting.
4	**Cost Book Keeping and Records**	https://icmai.in/CASB/casb-about.php (ICAI resources available in the website).	
5	**Methods of Costing**	Cost Accounting: Foundations and Evolutions (Eighth Edition) - Michael R. Kinney, Cecily A. Raiborn.	To appreciate various cost accumulation processes designed with due consideration to the nature of output.
6	**Cost Accounting Techniques**	Horngren's Cost Accounting: A Managerial Emphasis – Datar & Rajan Pearson Publication	To attain adequate knowledge to apply costing techniques in decision management and appreciate control techniques for cost optimization.

Contents as per Syllabus

Contents as per Syllabus

SECTION-A

Introduction to Cost Accounting

Introduction to Cost Accounting 1

This Module Includes

Introduction to Cost Accounting

SLOB Mapped against the Module:

To develop a detail understanding of the fundamental concepts associated with cost and costing. (CMLO 2a, 3a, 5a)

Module Learning Objectives:

After studying this module, the students will be able to –

- Conceptualize the nature and scope of Cost Accounting
- Distinguish the characteristic features of Financial Accounting, Cost Accounting and Management Accounting.
- Understand fundamental role of the three in the operation of an organisation
- Understand the important Cost Accounting terminology
- Contextualize classification cost
- Understand the basic issue of segregation of semi-variable cost into its fixed and variable elements

Introduction

1.1

One important definition of accounting put forward by American Accounting Association reads as follows:

'Accounting is the process of identifying, measuring and communicating economic information to permit informed judgements and decisions by users of the information'.

From the above definition it is obvious that accounting is a process which as its end product, has information that is economically worthwhile for decision making. Further, accounting is concerned with providing both financial and non-financial information that will help decision-makers to make appropriate decisions based on informed judgements. This is pictorially represented as follows:

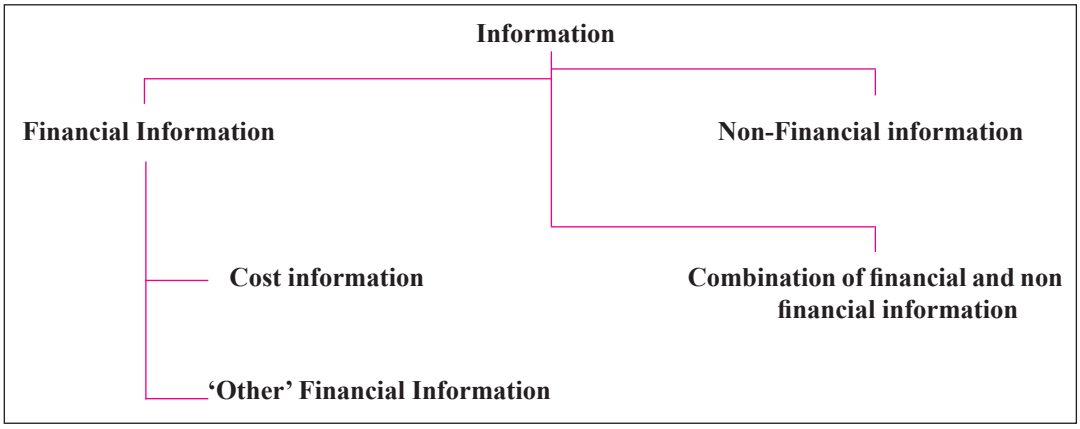


Figure 1.1: Types of Information

Cost information is a type of financial information that is related to the cost of the product or service. Cost Accounting, which is a branch of accounting, deals with the whole gamut of preparation and presentation of cost information. It is important to note that information provided by the cost accounting system[1] is referred as cost information which particularly includes the following:

a. The unit cost of a product, work or service
b. Various elements of cost of a department or a factory or any other cost object.
c. The volume of waste and the technological loses
d. The costs related to the number of activities
e. cost analysis (for decision making)

[1] Cost accounting system is the discussed subsequently under 'scope of cost accounting' and also in module 6 of this study note.

it is important to note that;

- **Users of financial information** – Accounting is often referred as a language of the Business which helps the business to communicate with the stakeholders who have an interest in an organization. Thus, the stakeholders of the business are the users of accounting information. These people are categorised as managers, shareholders and potential investors, employees, creditors and the government and each of these groups has its own requirements for information[2]. It is important to note that the stakeholders are either internal (managers, shareholders, employees, creditors) or external (potential investors and government).

  It is important to note that the management accounting is concerned with the provision of information to people within the organization (internal users) to help them make better decisions and improve the efficiency and effectiveness of existing operations, whereas financial accounting is concerned with the provision of information to external users. Thus, management accounting is often related to internal reporting while financial accounting is related to external reporting.

- **Quality of financial information** – the success or failure of an organisation depends to a great extent on the effectiveness and efficiency of the decisions made. For example, during the early period of lockdown brought about by the COVID 19, Mr Keshubhai, a vegetable vendor adjusted to the new normal within few days and started online transactions and home delivery during 7 pm to 8 pm and 7 am to 8 am when lockdown was eased. While Mr Bikram, who sells vegetables in the same Bazar was undecided and waited for the lockdown to end. The decision made by the two vegetable vendors is being made on the basis of the information they possess at the time of making the decision[3].

  Thus, one of the basic aspects of accounting is to generate quality financial information for the users such that they can make efficacious decision making which lead to successful business.

From the above discussion it is apparent that the main purpose of accounting is to create financial information which is used by users (internal and external). There is specific information need of each individual user. While the internal users would require financial information, which would provide information to people within the organization to help them make better decisions and improve the efficiency and effectiveness of existing operations, ultimately leading to a successful business. This is the arena of management accounting and the financial information is referred as cost information for the purpose of this study note. While financial accounting is concerned with the provision of information to users external to the organization.

It is of prime importance to point out that cost accounting and management accounting are often used interchangeably though there is significant difference between the two in respect of the purpose they serve and the scope of the two. Cost accounting discusses the nuances of the process of cost accumulation for fixation of sale price, valuation of inventory and taking other operating decisions. This is required for profit calculation and external reporting, as and when necessary. Whereas management accounting relates to the provision of appropriate information for decision-making, planning, control and performance evaluation. However, a study of the literature reveals that the distinction between cost accounting and management accounting is not clear cut and the two terms are often used synonymously[4].

---

2. Students may note that in Para 9 of Framework for the Preparation and Presentation of Financial Statements in accordance with Indian Accounting Standards issued by ICAI, the users of financial statements and their information needs are mentioned with specificity and in Para 10, the financial information need of Investors are set as the most important information need as it is stated that their information need would suffice the information need of the other users.
3. This is, off course, a non-financial information, and is being used here for the sake of understanding the link between a decision and a success/ failure of a business.
4. For detailed discussion, readers may refer to chapter 1, Management and Cost Accounting, eighth edition by Colin Drury.

1.1.1 Evolution of Cost Accounting

The double entry system of accounting was initiated in 1494 . Since then, till the after period of Industrial Revolution cost accounting remained as a small branch of financial accounting. The need for information on internal operation and the competitive business environment ushered by the Industrial revolution acted as catalyst in the development cost accounting. Firms, such as textile mills and railroads, were compelled to devise internal administrative procedures to coordinate the various operations involved in the performance of the basic activity of conversion of raw materials into finished goods by textile mills and the transportation of passengers and freight by the railroads. During 1880s, the newly formed mass distribution and mass production enterprises adapted the internal accounting reporting systems of the railroads to their own organizations. But all these along with the adaptations were exclusively focussed on direct labour and direct material (prime costs).

The scientific management movement provided a major impetus to the development of cost accounting practices. The period 1880 - 1925 saw the development of complex product designs and the emergence of multi activity diversified corporations like Du Pont, General Motors etc. It was during this period that scientific management was developed which led the accountants to convert physical standards into Cost Standards, the latter being used for variance analysis and control. During the World War I and II the social importance of Cost Accounting grew with the growth of each country's defence expenditure. In the absence of competitive markets for most of the material required for war, the governments in several countries placed cost-plus contracts under which the price to be paid was cost of production plus an agreed rate of profit. The reliance on cost estimation by parties to defence contracts continued after World War II.

In India, prior to independence, there were a few Cost Accountants, and they were qualified mainly from I.C.M.A. (now CIMA) London. During the World War II, the need for developing the profession in the country was felt, and the leadership of forming an Indian Institute was taken by some members of Defence Services employed at Kolkata. However, with the enactment of the Cost and Works Accountants of India Act, 1959, the Institute of Cost Accountants of India (erstwhile The Institute of Cost and Works Accountants of India) was established at Kolkata. The profession assumed further importance in 1968 when the Government of India introduced Cost Audit under section 233(B) of the Companies Act, 1956. At present it is under Section 148 of the Companies Act, 2013. Many times, we use Cost Accounting, Costing and Cost Accountancy interchangeably. But there are subtle differences among these terms. Though the terms are used interchangeably, it is important to know the precise meaning of the terms.

1.1.2. Three Basic Definitions

From discussions in the previous section, it is obvious that cost accounting is a specific branch of the Accounting which caters to the financial (cost) information needs of the users. Cost and management accountancy primarily accommodates the financial information needs of the internal users[8]. But financial accountancy records and reports which culminates in the preparation of financial statements of an organisation is solely targeted towards the financial

---

5. Summa de arithmetica, geometria. Proportioni et proportionalita, a textbook for use in the schools of Northern Italy, was published in Venice in 1494. Though the book is basically on the synthesis of the mathematical knowledge of his time it is also notable for including one of the first published descriptions of the bookkeeping method that Venetian merchants used during the Italian Renaissance, known as the double-entry accounting system.
6. https://archive.org/details/scientificmanage00tayl
7. For a comprehensive understanding of the evolution of cost and management accounting, students are advised to refer The Evolution of Management Accounting by Robert S. Kaplan Source: The Accounting Review, Jul., 1984, Vol. 59, No. 3 (Jul., 1984), pp. 390-418, Published by: American Accounting Association.
8. Though in some specific cases, cost accounting records and reports are used by external users, management accounting is solely cater to the financial information needs of the internal users.

information need of the external users. Thus, it would not be an exaggeration to highlight that cost and management accountancy is specifically aligned to the accomplishment of the strategic goal of an organisation as decision making is the epicentre of strategic success/failure.

Before entering into the nuances of the academic discipline of cost accountancy it is essential to read into the three basic conceptual issues which are discussed in the following lines.

1. **Cost Accountancy:** - Cost Accountancy is the academic discipline of cost accounting and is defined as 'the application of costing and cost accounting principles, methods and techniques to the science and art and practice of cost control and the ascertainment of profitability as well as presentation of information for the purpose of managerial decision making.'

   Four particular points summarizes the above-mentioned definition.

   a. The application of the costing and cost accounting principles is encompassed in cost accountancy.

   b. This application is with specific purpose and that is for the purpose of cost control, ascertainment of profitability.

   c. Cost accountancy is a combination of art and science; it is a science as it has well defined rules and regulations, it is an art as application of any science requires art and it is a practice as it has to be applied on continuous basis and is not a onetime exercise.

   d. Cost accountancy merely caters to the need of the cost information need of the management which facilitate decision making.

2. **Cost accounting** - CIMA Official Terminology defines cost accounting as the process of gathering of cost information and its attachment to cost objects, the establishment of budgets, standard costs and actual costs of operations, processes, activities or products; and the analysis of variances, profitability or the social use of funds. Thus, cost accounting encompasses the following;

   a. One of the main purposes of cost accounting is gathering of cost information related to cost objects. This cost information is then suitably presented to the management which aides them in their decision-making process.

   b. Nuances of cost accounting includes the process of cost accumulation through which the cost of operations, processes or activities or products is calculated. Establishment of standard cost and variance analysis are important aspects[9].

   c. Computation profitability[10] which pivots around fixation of selling price is an important aspect of cost accounting.

3. **Costing** - CIMA Official Terminology specifically states that the use of the term costing is not recommended except with a qualifying adjective, for example standard costing. The term is used in the following connotations; batch costing, continuous operation costing, contract costing, job costing, service costing, specific order costing, absorption costing and marginal costing.

Thus, it is important to note that the term 'costing' is only to be used as a qualifying adjective

1.1.3. Objectives of Cost Accounting:

It is reiterated that the very basic objective of Cost Accounting is preparation and presentation of cost information. The details of the basic objective are summarized in the following lines.

---

9. It is important to note that these are really aspects of management accounting as has been discussed previously. It has also been discussed that the arena of cost accounting and management are often blurred and is not specifically demarcated though the two covers comprehensively different aspects of dealing with cost information.

10. It is important to note that 'social use of funds and 'profitability' have been synonymously used by The Document.

1. To ascertain the cost of production on per unit basis, for example, cost per kg, cost per meter, cost per litre, cost per ton etc.
2. Cost accounting helps in the fixation of selling price. Cost accounting enables to determine the cost of production which helps to fix the selling price.
3. Cost accounting helps in cost control and cost reduction.
4. Ascertainment of division wise, activity wise and unit wise profitability is analysed through cost accounting.
5. Cost accounting also helps in locating wastages, inefficiencies and other gaps in the production processes and services offered.
6. Cost accounting helps in presentation of relevant data to the management which helps in decision making. Decision making is the most important functions of Management which has specific linkages to the strategic success/failure of an organisation.

1.1.4. Scope of Cost Accounting

The scope of cost accounting is broad and is directed into the operations of the organisation. Thus a proper functioning cost accounting system ensures the strategic success/ failure of the organisation.

- **Cost book-keeping**[11] - It involves maintenance of records of all costs incurred from their incurrence to their charge to departments, products and services. Such recording is done on the basis of double entry system.
- **Cost ascertainment -** Ascertaining cost of products, processes, jobs, services, etc., is the important function of cost accounting. Cost ascertainment becomes the basis of managerial decision making such as pricing, planning and control.
- **Cost Analysis** - It involves the process of finding out the causal factors of actual costs varying from the budgeted costs and fixation of responsibility for cost increases.
- **Cost Comparisons -** Cost accounting also encompasses comparisons between cost from alternative courses of action such as use of technology for production, cost of making different products and activities, and cost of same product/ service over a period of time.
- **Cost Control -** Cost accounting also includes the utilization of cost information for exercising control. It involves a detailed examination of each cost in the light of benefit derived from the incurrence of the cost. Thus, cost is analyzed to recognize whether the current level of costs is satisfactory in the light of standards set in advance.
- **Cost Reports** - Presentation of cost is the ultimate function of cost accounting. These reports are primarily for use by the management at different levels. Cost Reports forms the basis for planning and control, performance appraisal and managerial decision making.
- **Cost Audit -** Cost Audit is the verification of correctness of Cost Accounts and check on the adherence to the Cost Accounting plan. Its purpose is not only to ensure the arithmetic accuracy of cost records but also to see the principles and rules have been applied correctly.

1.1.5. Cost Accounting Systems

Systems and procedures are devised for proper accounting for costs. Such a system is referred as a cost accounting system. The design of such a system varies significantly and depends on the type of the product/service of the organisation. As such six types of cost accounting system may be identified. These are listed as under.

---

[11] This is covered in module 4 of this study note.

1. Historical Costing

In this type of costing system, the costs are ascertained only after they have been incurred. The main objective of it is to ascertain costs that have been incurred in past. It is the process of accumulation of costs after they are incurred in a systematic manner. The historical costs are used only for post-mortem examination of actual costs incurred and it would be too late to control. The actual figures can be compared only when the standards of performance exist.

2. Absorption Costing[12]

Under the 'absorption costing system' all fixed and variable costs are allotted to cost units and total overheads are absorbed according to activity level. In absorption costing system, fixed manufacturing overheads are allocated to products, and these are included in stock valuation. Therefore, valuation of inventories of finished goods and work in progress includes manufacturing fixed cost and transferred to next period. Unlike manufacturing fixed overheads, the administrative overheads, selling and distribution overheads are treated as fixed cost and recorded only when they are incurred. It is a traditional form of cost ascertainment. It is based on the principle that costs should be charged or absorbed to whatever is being costed – be it cost unit, cost centre – on the basis of the benefit received from these costs.

3. Direct Costing

It is a method of costing in which the product is charged with only those costs which vary with volume. Variable or direct costs such as direct material, direct labour and variable manufacturing expenses are examples of costs charged to the product. All indirect costs are charged to profit and loss account of the period in which they arise. Indirect costs are disregarded in inventory valuation. This is similar to marginal cost accounting system where costs are classified into fixed and variable costs. Variable costs are charged to unit cost and the fixed costs attributable to the relevant period are written-off in full against the contribution for that period. Contribution margin indicates the recovery of fixed cost before contributing towards the operational profit. This technique is widely used for internal management purpose for decision making rather than for external reporting[13].

4. Standard Costing[14]

Under standard costing system, the ascertainment and use of standard costs and the measurement and analysis of variances is done for control purpose. Standard cost is a predetermined cost which is computed in advance of production on the basis of a specification of all the factors affecting costs and used in Standard Costing. Its main purpose is to provide a base for control through Variance Analysis, for valuation of stock and work-in-progress and, in some cases, for fixing selling prices.

5. Uniform Costing

It is not a distinct method of costing. It is the adoption of identical costing principles and procedures by several units of the same industry or several undertakings by mutual agreement. It facilitates valid comparisons between organizations and helps in elimination of inefficiencies.

Essentials of a Cost Accounting System

A company deploys the cost accounting system to track the raw materials even before the production process begins. Eventually, these raw materials convert into finished goods in real-time. Once the raw materials enter the production, the system tracks and record the use of the materials by crediting the raw material account and debiting

12. This is one of the frequently used cost accounting systems and is used for external reporting purpose, as well.
13. This is discussed in module 6.1 of this study note.
14. This is discussed in module 6.2 of this study note.

the goods in the process account. Thus a suitable cost accounting system will vary according the to the operation of converting raw material into finished goods. But overall, a good cost accounting system should possess the following seven qualities.

1. Cost accounting system should be tailor made, practical, simple and capable of meeting the requirement of a business concern.
2. The data to be used by the cost accounting system should be accurate, otherwise it may distort the output of the system.
3. Necessary cooperation and participation of executives from various departments of the concern is essential for developing a good system of cost accounting.
4. The cost of installing and operating the system should not be too high and ultimately pass the cost-benefit analysis test.
5. The system of costing should not sacrifice the utility by introducing meticulous and unnecessary details.
6. A carefully phased programme should be prepared by using network analysis for the introduction of the system.
7. Management should have a faith in the costing system and should also provide a helping hand for its development and success.

Installation of a Costing Accounting System

Cost accounting system is a system that accumulates costs, assigns them to cost objects and reports cost information. In addition to this, a proper cost accounting system assists management in the planning and control of the business operations as well as in analyzing product profitability. There are several other advantages of a well-defined costing system in an organization like generating information for decision making, supplying information to the management for internal control, detailed analysis of costs. However, it is necessary that the cost accounting system is properly installed in an organization. The essential elements of such a system is discussed in the previous section. The following factors should be taken into consideration while designing a costing system.

1. **Size of the firm** - Size of the firm is an extremely important factor in designing a cost accounting system. As the size of the firm and its business grows, the volume and complexity of the cost data also grows. In such situation, the cost accounting system should be capable of supplying such information.
2. **Manufacturing Process** - Process of manufacturer changes from industry to industry. In some industries, there may be a continuous process of production while in some batch or job type of production may be in operation. A cost accounting system should be such that the manufacturing process is taken into consideration and cost data is collected accordingly.
3. **Nature and Number of Products** - If a single product is produced, all costs like material, labour and indirect expenses can be directly allocated to that product. But if more than one product is manufactured, the question of allocation and apportionment as well as absorption of indirect expenses (Overheads) arises and hence the cost accounting system should be designed accordingly as more complex data will be required.
4. **Management Control Needs** - The designing of a cost accounting system in a business organization is guided by the management control requirements. The costing system should supply data to persons at different levels in the organization to take suitable action in their respective areas.
5. **Raw Materials -** The designing of a cost accounting system in a business is also guided by the raw materials required for the production. The nature of raw materials and the degree of waste therein influence the designing of costing system. There are some materials which have a high degree of spoilage. The costing system should be such that identification of spoilage, keeping records of materials, pricing of the issues etc are taken into consideration.

6. **Organization Structure** - The structure of the organization also plays a vital role in designing a costing system. The system should correspond to the hierarchy of the organization.

7. **External Factors** - External factors are also important in designing of a costing system. For example, Cost Accounting Record Rules have been mandatory for certain types of industries. For the sake of compliance of the same, costing system should be designed.

Limitations of Cost Accounting System

Cost Accountancy is not an exact science but an art which has been developed through theories and accounting practices based on reasoning and common sense. The theories put to use in a particular organisation are often debatable. Conventions and accepted principles of Cost Accounting set the norm on which the cost accounting system are based. Some of the limitations of a cost accounting system are discussed in the following lines.

1. Installing a cost accounting system is expensive. It is argued that installation of a cost accounting system enhances cost of production. This is debatable as various cost reduction and cost control along with cost engineering (analysing alternative methods of production) helps in reducing cost.

2. The results shown by the financial accounts almost always differ from those shown by the cost accounts. Thus, there is a need for preparing reconciliation statements.

3. Differing views are put forward by cost accountants about the items to be included in cost accounting.

4. There is lack of exactness in the calculated costs as conventions, estimations and flexible factors are considered before they are calculated. Some of the aspects due to which the calculated costs cannot be said to be exact are as follows[15]:

   (a) Classification of costs into its elements.

   (b) Materials issue pricing based on average or standard costs.

   (c) Apportionment of overheads expenses and their allocation to cost units / centers.

   (d) Allocation of joint costs.

   (e) Segregation of semi variable overheads into fixed and variable.

   Cost Accounting lacks the uniform procedures and formats in preparing the cost information of a product / service. Keeping in view this limitation, all Cost Accounting results can be taken as mere estimates.

1.1.6. Financial Accounting, Cost Accounting and Management Accounting – a comparative study

Accounting is the systematic recordation of the financial transactions of a business. The process includes systematic record keeping, tracking transactions, and aggregating the resulting information into a set of financial reports. Thus, the three aspects of accounting are

- **Documentation (Record Keeping)**

  The system of record keeping for accounting requires the use of a standard set of accounting policies and procedures, as well as standardized forms. The procedures should incorporate controls designed to ensure that assets are used as intended.

- **Tracking of a transaction**

  A separate procedure is needed to collect information about each type of business transaction. Transaction tracking occupies the bulk of the time of the accountant.

[15] These are discussed vividly in different sections of the study note. Students are advised to note them whenever and wherever they come across these issues while proceeding with learning of this module.

- **Financial Reporting**[16]

Accounting frameworks are specified by generally accepted accounting principles (GAAP) and accounting standards of the respective countries. These mandates specific manner in which business transactions must be treated in the accounting records and aggregated into the financial statements. The result is an income statement, balance sheet, statement of cash flows, and supporting disclosures that describe the results of a reporting period and the financial position of the reporting entity at the end of that period.

Accounting is classified as financial accounting, cost accounting and managements accounting. The classification is based on the specific function each of them performs and the nature of the accounting information they generate. This is pictorially represented below:

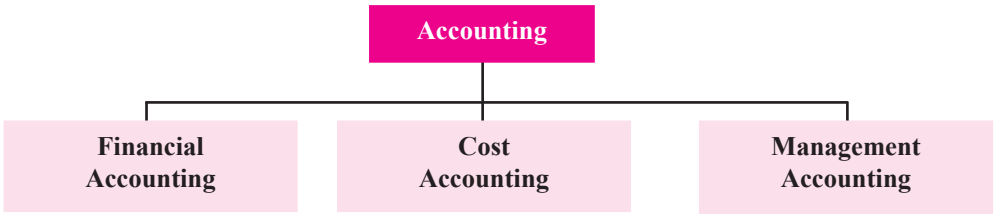


Figure 1.2: Classification of Accounting

Financial Accounting and Cost Accounting – A Comparison

Financial accounting and cost accounting are complementary to each other. Financial accounting, as such, is the systematic procedure of recording, classifying, summarizing, analyzing, and reporting business transactions. The primary objective is to reveal the profits and losses of a business. Financial accounting provides a true and fair evaluation of a business. It, therefore, safeguards the interests of stakeholders. Cost Accounting, as such, is a subset of financial accounting, and is focussed on the process of conversion of raw material into finished goods. As such the cost accumulation process is the basic issue of cost accounting. The differences between cost accounting and financial accounting are presented in a tabular format.

Basis of Comparison	Financial Accounting	Cost Accounting
Purpose	It is prepared for providing information about the results of the business activities as a whole for a particular period to the users.	The main purpose of Cost Accounting is to provide information to the management for the proper planning, control and decision making.
Need	Financial Accounts are maintained as per the requirements of Companies Act and Income Tax Act.	Cost accounts are maintained to meet the requirement of the Management.
Recording	Transactions are classified, recorded and analysed subjectively.	In cost accounting, transactions are classified, recorded and analysed objectively according to the purpose for which costs are incurred.

16. This is specific to financial accounting as the users are external to the business in such case. Thus, reporting is crucial and needs standardization in case of financial accounting. Thus, financial reporting.

Basis of Comparison	Financial Accounting	Cost Accounting
Analysis of profit	Financial accounting reveals the profit of a business as a whole.	Cost Accounting shows the profit made on each product, job or process.
Accounting period	Financial accounts are prepared for a definite period.	Cost reports are prepared frequently and submitted to the management according to their requirement which may be daily, weekly, etc.
Stock valuation	In financial accounts, stocks are valued as per the relevant Accounting Standard (for example, AS 2 specifies that closing inventory should be valued at cost [carrying amount] or net realisable value whichever is lower.	Cost accounting stocks are valued at cost
Relative Efficiency	Financial accounts do not reveal the relative efficiency of each department or section.	Cost account provides information on the relative efficiencies of various plant and Machinery

Cost Accounting and Management Accounting - A Comparison

Cost accounting is that branch of accounting which aims at generating information to control operations with the aim of maximizing profits and efficiency of the company. Conversely, management accounting is the type of accounting which assist management in planning and decision-making and thus is also referred as decision accounting. While cost accounting has a quantitative approach, management accounting gives emphasis on both quantitative and qualitative data.

The two-accounting system plays a significant role, as the users are the internal management of the organization. Following is a tabular representation of the two accounting systems.

Basis of Comparison	Cost Accounting	Management Accounting
Meaning	The recording, classifying and summarising of cost data of an organisation is known as cost accounting.	The accounting in which the both financial and non-financial information are provided to managers is known as Management Accounting.
Information Type	Quantitative.	Quantitative and Qualitative.
Objective	Ascertainment of cost of production.	Providing information to managers to make decisions, and forecast strategies.
Scope	Concerned with ascertainment, allocation, distribution and accounting aspects of cost.	Managerial decision making.

Basis of Comparison	Cost Accounting	Management Accounting
Specific Procedure	Yes	No. Thus the scope of management accounting is much broad.
Target	Recording of cost data (past and present).	It gives more stress on the analysis of future projections.
Interdependency	Can be installed without management accounting.	Cannot be installed without cost accounting.

Financial Accounting and Management Accounting – A Comparison

The key difference between financial accounting and management accounting is that financial accounting is the preparation of financial reports for the analysis by the external users interested in knowing the company's financial position. In contrast, management accounting is the preparation of financial and non-financial information, which helps managers (internal user) make policies and strategies for the company. The distinguishing features of the two are presented in a tabular format in the next few lines.

Basis for Comparison	Financial Accounting	Management Accounting
Purpose	Financial Accounting classifies, analyses, records, and summarizes the financial transactions of a particular period of the company.	Management accounting helps management make effective decisions about the business.
Application	Financial accounting is prepared to reflect true and fair picture of financial affairs.	Management accounting helps management to take meaningful steps and strategize.
Scope	The scope is pervasive, but not as much as the management accounting.	The scope is much broader.
Information type	Quantitative.	Quantitative and qualitative.
Inter dependence	It is not dependent on management accounting.	Management accounting is basically decision-making accounting and depends on information created by Financial Accounting as well as Cost Accounting.
Statutory requirement	It is legally mandatory to prepare financial accounts of all companies. (for example, in the Indian Context Companies Act 2013, relevant rules of accounting standards furnish the statutory requirements)	Management accounting has no statutory requirement.

Format	Financial accounting has specific formats for presenting and recording information.	There's no set format for presenting information in management accounting.
Users	Mainly for potential investors as well as all stakeholders.	Only for management;
Verifiable	The information presented is verifiable.	The information presented is predictive and not immediately verifiable.

Important Cost Accounting Terms

1.2

In this section some of the cost accounting terms, which are of prime importance for conceptualising the subject of cost accounting.

1. **Cost** - Cost is defined as the expenditure (actual or notional) incurred on or attributable to a given product or service. It can also be described as the resources that have been sacrificed or must be sacrificed to attain a particular objective. In other words, cost is the amount of resources used for something which must be measured in terms of money.

   For example – Cost of preparing one cup of tea is the amount incurred on the elements like material, labour and other expenses. Similarly cost of offering any services like banking is the amount of expenditure for offering that service. Thus, cost of production or cost of service can be calculated by ascertaining the resources used for the production or services.

   CIMA Official Terminology[17] defines cost either as a noun or as a verb. The following are the two-definition put forward in the official document

   The term 'cost' as a noun – The amount of cash or cash equivalent paid or the fair value of other consideration given to acquire an asset at the time of its acquisition or construction.

   The term 'cost' as a verb – To ascertain the cost of a specified thing or activity. The word cost can rarely stand alone and should be qualified as to its nature and limitations.

   From the above discussion it is clear that the usual connotation of the term cost is the historical cost which is used as a measurement basis for recording cost accounting transactions. But costs can also mean economic costs[18] which are pertinent for decision making purpose.

   The Institute of Cost Accountants of India, previously known as The Institute of Cost and Works Accountants of India, was established in 1944 as a registered company under the Companies Act 1913 with the objects of promoting, regulating and developing the profession of Cost Accountancy. In 1959, it is converted to a statutory body by an Act of Parliament.

   The Institute recognized the need for structured approach to the measurement of cost in manufacture or service sector and considered their responsibility to provide guidance to the stakeholders of the economy to achieve uniformity and consistency in classification, measurement and assignment of cost to product and services. They constituted the Cost Accounting Standards Board (CASB) in 2001 -2002, with the objective of formulating the Cost Accounting Standards (CAS[19]).

---

17. CIMA Official Terminology, 2005, The Chartered Institute of Management Accountants (CIMA Publishing, an imprint of Elsevier).
18. This includes opportunity cost which is pertinent for decision making purpose. This is taken up in later part of this module.
19. This are, thus, the guiding principles of cost accountancy. A comprehensive discussion is undertaken in Module III of this study note.

Para 4.5 of CAS 1 states that cost is a measurement, in monetary terms, of the amount of resources used for the purpose of production of goods or rendering services.

Thus 'cost' can be classified either as historical cost or as economic cost

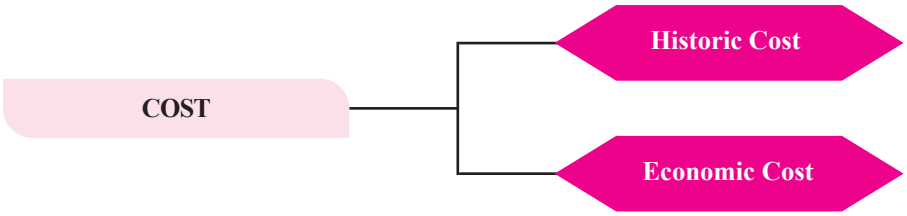


Figure 1.3: Types of Cost

Historical cost is the factual cost incurred for the production of goods or services, encompassing direct material costs, direct labour costs, and manufacturing overheads costs. It emphasizes the retrospective nature of the cost, reflecting the real expenditures made in the past to produce a particular unit of output.

- **Out-of-Pocket Cost** – this refers to the actual expenditures or payments made by an individual or a business for goods, services, or resources. These costs are tangible and represent real cash outlays. Out-of-pocket costs can include expenses such as direct payments for goods, services, wages, and other tangible items. It is often historical in nature but is pertinent to decision making.

Economic cost – This is also referred as opportunity cost. It is the value of the best alternative course of action that was not chosen. In other words, it is what could have been accomplished with the resources used in the course of action if they were employed in the next best alternative. It represents opportunities forgone.

Example

If a person has a job offer that pays ₹ 25 for an hour's work. But instead, he chooses to take a nap for an hour then the historical cost of the nap is zero as the person did not dash out any money in order to take the nap. However, the economic cost of the nap is ₹ 25. This is what he could have been earned if he worked and did not take the nap. Thus, ₹ 25 is a cost of the decision of taking the nap as it is the benefit foregone in taking the nap.

Sunk Cost – Cost that has been irreversibly incurred or committed and cannot therefore be considered relevant to a decision. Sunk costs may also be termed irrecoverable costs.

Imputed Costs – Imputed costs are hypothetical or notional costs, not involving cash outlay computed only for the purpose of decision making. In this respect, imputed costs are similar to opportunity costs. Interest on funds generated internally, payment for which is not actually made is an example of imputed cost.

Relevant Costs: Relevant costs are costs which are relevant for a specific purpose or situation. In the context of decision making, only those costs are relevant which are pertinent to the decision at hand.

Since we are concerned with future costs only while making a decision, historical costs, unless they remain unchanged in the future period are irrelevant to the decision-making process.

Avoidable Costs & Unavoidable Costs – Avoidable Costs are those which under given conditions of performance efficiency should not have been incurred. Unavoidable Costs which are inescapable costs, which are essentially to be incurred, within the limits or norms provided for. It is the cost that must be incurred under a programme of business restriction. It is fixed in nature and inescapable

Controllable and Non-Controllable Costs – Controllable Cost is that cost which is subject to direct control at some level of managerial supervision. Non-controllable Cost is the cost which is not subject to control at any level of managerial supervision.

2. Cost Object

A cost object is any item for which cost measurement is required, for example, a product or a customer. Examples of cost objects include:

- A product
- A service to a hotel guest
- A sales territory

CIMA Official Terminology states, A cost object is, for example, a product, service, centre, activity, customer or distribution channel in relation to which costs are ascertained.

GACAP[20] defines a cost object as an activity, contract, cost centre, customer, process, product, project, service or any other object for which costs are ascertained. This definition is also corroborated in paragraph 4.7 of CAS 1.

3. Cost Unit: Cost Unit is a device for the purpose of breaking up or separating costs into smaller sub divisions attributable to products or services. CIMA official Terminology defines a cost unit as a unit of product or service in relation to which costs are ascertained. Cost unit should be appropriate to the type of business. It is important to note that once costs are traced to cost centres, they are further analysed in order to establish the cost per cost unit. Alternatively, some items of costs may be charged directly to a cost unit, for example direct materials and direct labour costs.

GACAP[23] defines a cost unit as a form of measurement of volume of production of a product or a service. Cost unit is generally adopted on the basis of convenience and practice in the industry concerned. This is also corroborated in paragraph 4.5 of CAS 1.

Example of cost unit

Business	Appropriate Cost Unit
Car manufacturer	Particular brand of car
Cigarette manufacturer	Packet/ piece of cigarette
Builder	Particular building /Flat
Audit company	Audit File / Chargeable hour

4. Composite Cost Unit[21] **–** The cost units for services are intangible and often comprise of two parts. Thus, they are referred as composite cost units. For example, if costs of a delivery service are being monitored and controlled by measuring the cost per tonne delivered then 'tonne delivered' is not an appropriate cost unit because it would not be valid to compare the cost per tonne delivered from place A to place B with the cost per tonne delivered from place M to place N. This is due to the simple fact that the distance is a major factor and delivering one tonne over a distance of one KM is not the same as delivering one tonne over a distance of 10 KM. Thus, Composite cost units. Composite cost units help to improve cost control in service organisations.

Examples of composite cost units might be as follows:

Business	Composite Cost Unit
Hospital	Patient – Day
Transport (Freight)	Tonne – kilometre
Transport (Passenger)	Passenger -KM

20. The GACAP is the abbreviated form of Generally Accepted Generally Accepted Cost Accounting Principles. It is issued by the Institute of Cost Accountants of India. This document is like a preface to the Cost Accounting Standards. (https://icmai.in/upload/CASB/2015/GACAP-Final.pdf)

21. This is discussed in details in module 5 of this study note.

5. **Cost Centre -** Cost centres are collecting places for costs before they are further analysed. For cost accounting purposes, departments are termed cost centres and the product produced by an organisation is termed the cost unit.

   CIMA Official Terminology defines a cost centre as a production or service location, function, activity or item of equipment for which costs are accumulated.

   GACAP[23] defines a cost unit as any unit of an entity selected with a view to accumulating all cost under that unit. The unit can be division, department, section, group of plant and machinery, group of employees or combination of several units. This definition is also corroborated in paragraph 4.6 of CAS 1.

   Cost Centre and Cost Object is the logical sub-unit for collection of cost. Cost Centre may be of two types personal and impersonal cost centres. Personal cost centre consists of a person or a group of persons. Cost centres which are not personal cost centres are impersonal cost centres. Again Cost centres may be divided into broad types i.e. Production Cost Centres and Service Cost Centres.

   - Production Cost Centres are those which are engaged in production like Machine shop, Welding shop, Assembly shop etc.
   - Service Cost centres[22] are for rendering service to production cost centre like Power house, Maintenance, Stores, Purchase office etc.

   Cost centre is often referred as a responsibility centre whose managers are normally accountable for only those costs that are under their control, also known as expense centres.

6. **Responsibility Centre -** Responsibility Center refers to a particular segment or unit of an organization for which a particular manager, employee, or department is held responsible and accountable for its business goals and objectives. It refers to the part of the company where a manager has authority and responsibility. A responsibility center is a functional entity within a business that tends to have its own goals and objectives, policies, and procedures, thereby giving managers specific responsibility for revenues, expenses incurred, funds invested, etc.

   CIMA official terminology defines responsibility centre as departmental or organisational function whose performance is the direct responsibility of a specific manager.

   There are usually four types of responsibility center which are identified as under.

   (a) Cost Centre – Under the cost center , the manager is held responsible only for the costs, including a production department, maintenance department, human resource department, etc. this is discussed in previous section.

   (b) Profit Centre – Under the profit center the manager is responsible for all costs and revenues. Here the manager would have all of the responsibility to make decisions that would affect both the price and the revenue.

   CIMA official terminology defines profit centre as part of a business accountable for both costs and revenues.

   (c) Revenue Centre – This segment is primarily responsible for attaining sales revenue. The performance would be evaluated by comparing the actual revenue attained with the budgeted revenue.

   CIMA official terminology defines revenue centre as centre devoted to raising revenue with no responsibility for costs, for example a sales centre. Often used in not-for-profit organisations.

---

22. Service cost centre provide services to other cost centres. When the output of an organisation is a service, rather than goods, an alternative name is normally used, for example support cost centre or utility cost centre (CIMA Official Terminology, 2005).

(d) Investment Centre – Apart from looking into the profits, this center looks into returns on the funds invested in the group's operations during its time.

CIMA official terminology defines investment centres as a profit centre with additional responsibilities for capital investment and possibly for financing, and whose performance is measured by its return on investment.

7. **Cost of Production:** To arrive at cost of production of goods, including those dispatched for captive consumption, adjustment for stock of work-in-process, finished goods, recoveries for sales of scrap, wastage and the like, shall be made. Cost of production of a service means cost of the service rendered.

GACAP[23] states, cost of production of a product or a service consists of cost of materials consumed, direct employee costs, direct expenses, production overheads, quality control costs, packing costs, research and development costs and administrative overheads relating to production.

To arrive at cost of production of goods dispatched for captive consumption[23], adjustment for Stock of work-in-Process, finished goods, recoveries for sales of scrap, wastage shall be made.

Thus Cost of production (for captive consumption) = cost of materials consumed + direct employee costs + direct expenses + production overheads + quality control costs + packing costs + research and development costs + administrative overheads ± adjustment for stock of WIP and FG

This definition is corroborated in paragraph 4.8 of CAS 1.

8. **Conversion Cost:** This term is defined as the sum of direct wages, direct expenses and overheads costs of converting raw material to the finished products or converting a material from one stage of production to another stage.

CIMA official terminology defines conversion cost as cost of converting material into finished product, typically including direct labour, direct expense and production overheads.

Para 4.4 of CAS 1 defines conversion cost is the production cost excluding the cost of direct materials.

9. **Overheads Cost:** An item of expense/cost which is not directly traceable to the product

CIMA official terminology defines overheads cost as expenditure on labour, materials or services that cannot be economically identified with a specific saleable cost unit.

GACAP[23] defines Overheads comprise costs of indirect materials, indirect employees and indirect expenses. This defnition is also coroborated in paragraph 4.24 of CAS 1

From the above defnitions two important perspectives are noted regarding overheads cost[24].

1. Overheads costs are not economically identifiable with the cost unit. Thus they are also referred as indirect costs.
2. Indirect costs comprise of indirect material, indirect labour[25] and indirect expenses.

The overheads expenditure is identified under a particular head based on the purpose of the expenditure based on the functions that are accomplished by the expenditure incurred. The functional classification[26] overheads are given as under.

---

23. 'Captive Consumption means the consumption of goods manufactured by one division or unit and consumed by another division or unit of the same entity or related undertaking for manufacturing another product(s)'. GACAP
24. A synonymous term 'burden' is in common use in the US and in subsidiaries of American companies.
25. CAS 7 specifies details about employee cost which is the connotation for the traditional term 'labour'. Thus, whenever the term 'labour' is used, it implies 'employee cost'
26. In standard books only this is mentioned as factory (production) overheads, administrative overheads and selling and distribution overheads. Here the classification is as mentioned in CAS 1.

1. Production Overheads: Indirect costs involved in the production of a product or in rendering service. (as noted in Para 4.27, CAS 1)
2. Administrative Overheads: Cost of all activities relating to general management and administration of an entity. (as noted in Para 4.2, CAS 1)
3. Distribution Overheads: Distribution overheads, also known as distribution costs, are the costs incurred in handling a product or service from the time it is ready for dispatch or delivery until it reaches the ultimate consumer including the units receiving the product or service in an inter-unit transfer. (as noted in Para 4.15, CAS 1)
4. Selling Overheads: Selling overheads are the expenses related to sale of products or services and include all indirect expenses incurred in selling the products or services. (as noted in Para 4.29, CAS 1)
5. Marketing overheads: Marketing Overheads comprise of selling overheads and distribution overheads. (as noted in Para 4.21, CAS 1)

The above classification is pictorially represented as follows:

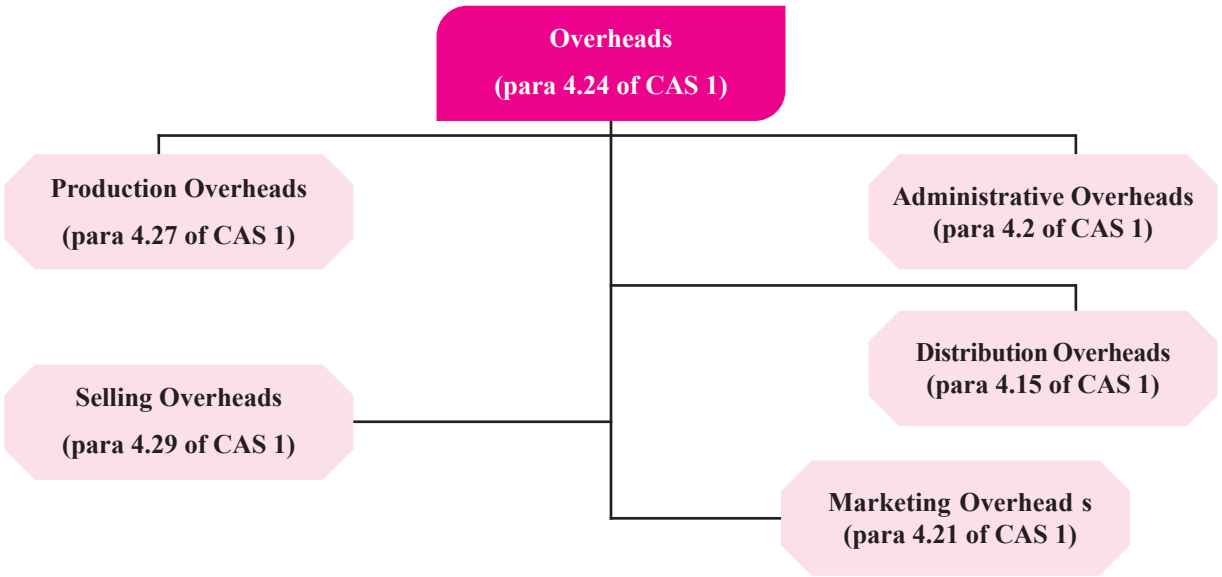


Figure 1.4: Types of Overheads

10. Cost Accounting Standards[27]

The Institute of Cost Accountants of India, recognizing the need for structured approach to the measurement of cost in manufacture or service sector and to provide guidance to the user organizations, government bodies, regulators, research agencies and academic institutions to achieve uniformity and consistency in classification, measurement and assignment of cost to product and services, has constituted Cost Accounting Standards Board (CASB) with the objective of formulating the Cost Accounting Standards. Till date, the Board has issued 24 Cost Accounting Standards, Generally Accepted Cost Accounting Principles, 11 Guidance Notes[28].

[27] This is discussed in details in Module 3 of this study note.

[28] Of the eleven guidance issued so far, nine is on Cost Accounting Standards and two on "Treatment of Costs Relating to Corporate Social Responsibility (CSR) Activities" and "Maintenance of Cost Accounting Records for Construction Industry Including Real Estate and Property Development Activity" respectively. (https://icmai.in/CASB/casb-about).

11. **Cost Allocation -** When items of cost (overheads) are identifiable directly with some products or departments such costs are charged to such cost centres. This process is known as cost allocation. Wages paid to workers of service department can be allocated to the particular department. Indirect materials used by a particular department can also be allocated to the department. Cost allocation calls for two basic factors –

    a. Concerned department/product should have caused the cost to be incurred, and

    b. Exact amount of cost should be computable.

12. **Cost Apportionment –** When items of cost (overheads) cannot be directly charged to or accurately identifiable with any cost centres, they are prorated or distributed amongst the cost centres on some predetermined basis. This method is known as cost apportionment. Thus, items of indirect costs residual to the process of cost allocation are covered by cost apportionment. The predetermination of suitable basis of apportionment is very important and usually following principles are adopted (in order to find suitable relation between the cost object and the cost to be apportioned).

    a. Service or use

    b. Survey method

    c. Ability to bear.

    The basis ultimately adopted should ensure an equitable share of common expenses for the cost centres and the basis once adopted should be reviewed at periodic intervals to improve upon the accuracy of apportionment.

    The term allocate is defined by the CIMA official terminology to assign a whole item of cost, or of revenue, to a single cost unit, centre, account or time period. In the US, "allocate" does not have this precise meaning, it is used more generally to refer to the whole process of overheads apportionment, allocation and absorption.

13. **Cost Absorption**[29] **-** Ultimately the indirect costs or overheads as they are commonly known, will have to be distributed over the final products so that the charge is complete. This process is known as cost absorption, meaning thereby that the costs absorbed by the production during the period. Usually any of the following methods are adopted for cost absorption:

    1. Percentage of direct material cost
    2. Percentage of direct labour cost
    3. Percentage of prime cost
    4. Direct labour hour rate
    5. Machine hour rate.

    The basis should be selected after careful maximum accuracy of cost distribution to various production units. The basis should be reviewed periodically and corrective action whatever needed should be taken for improving upon the accuracy of the absorption.

    CIMA official terminology defines overheads absorption rate (OAR) as a means of attributing overheads to a product or service, based for example on direct labour hours, direct labour cost or machine hours.

14. **Under/over absorption of overheads**[30] **-** Costs, as such, are either direct costs which are traceable to the cost unit or are indirect costs (also referred as overheads) which are not traceable to the cost unit. Thus, in the cost accumulation process the direct costs can be added specifically to the cost unit as they directly attribute to the product. But the overheads or indirect cost cannot be directly added to the product cost. In this respect, absorption costing recommends the use of pre-determined rates for absorption of overheads cost to the products.

---

29. This is fundamental aspect of the absorption costing system.
30. This is discussed in details under the section 'overheads' in Module 2.

Overheads absorption rates are usually predetermined, that is, they are calculated in advance of the period over which they will be used. The advantage of using predetermined rates is that managers have an overheads rate permanently available which they can use in product costing and fixation of sale price.

But this gives rise to the problem of under/over absorption as the actual figures for overheads and for the absorption base are likely to be different from the estimates used in calculating the absorption rate.

When this happens, the overheads will be either under absorbed or over absorbed. If the actual overheads incurred is higher than the overheads absorbed, then overheads is under absorbed and if the actual overheads incurred is lower than the overheads absorbed then the overheads is over absorbed.

Illustration 1

Data for MNQ Company for a particular period is as under

Particulars	Machining Department	Finishing Department
Estimated/budget data		
Production overheads	₹ 3,40,000	₹ 1,20,000
Machine hours	1,70,000	4,200
Direct labour hours	16,500	40,000
Actual results		
Production overheads incurred	₹ 3,60,000	₹ 1,29,400
Machine hours	1,50,000	3,900
Direct labour hours	18,290	44,100

It is company policy to use machine hour rate to absorb production overheads in the machining department. The finishing department is more labour intensive and therefore labour hour rate is considered as more appropriate overheads absorption rate.

Solution:

The overheads absorption rates (OARs), the under and over absorbed overheads are calculated as follows;

Particulars	Machining Department	Finishing Department
OAR	$\frac{340000}{170000}$ = ₹2 per machine hour	$\frac{120000}{40000}$ = ₹3 per labour hour
Overheads absorbed	₹ 3,00,000 =(₹ 2 × 150000 labour hour)	₹ 1,32,300 (₹3 × 44100 machine hours)
Actual overheads (incurred)	₹3,60,000	₹1,29,400
Under/Over absorbed overheads	₹ 60,000 (absorbed overheads is less than actual overheads, thus under absorbed)	₹2,900 (absorbed overheads is greater than actual overheads, thus over absorbed)

Elements of Cost

1.3

Costs are either direct (traceable to the cost unit) or indirect, referred as overheads (not traceable to the product) and thus has to be absorbed to the product on the basis of some pre-determined basis. This is briefly discussed in the previous section. The elements of cost along with the classification may be represented as follows.

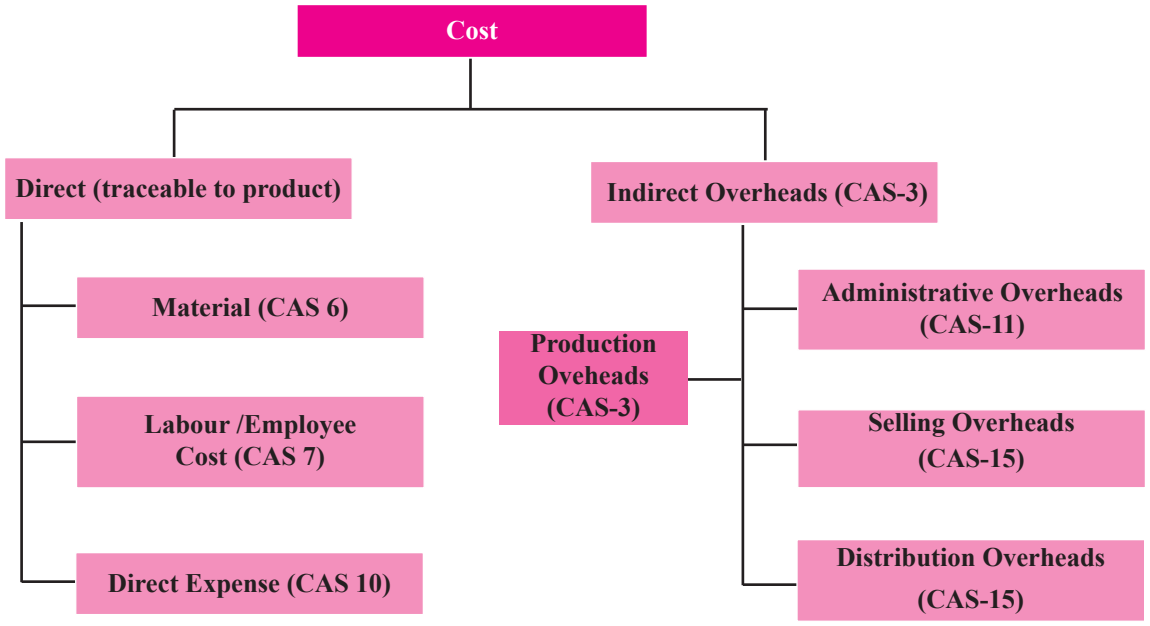


Figure 1.5: Elements of Cost

Raw materials are converted into finished products by a manufacturing concern with the help of labour, plants etc. The elements that constitute the cost of manufacturing are known as elements of cost. The elements of cost include the following:

- Material
- Labour[31]
- Expenses

But as it is previously noted that each of the above element of cost includes both direct cost and indirect costs, the indirect cost are also referred as overheads. This is pictorially represented in the following diagram.

[31] Labour cost is referred as employee cost as per CAS 7

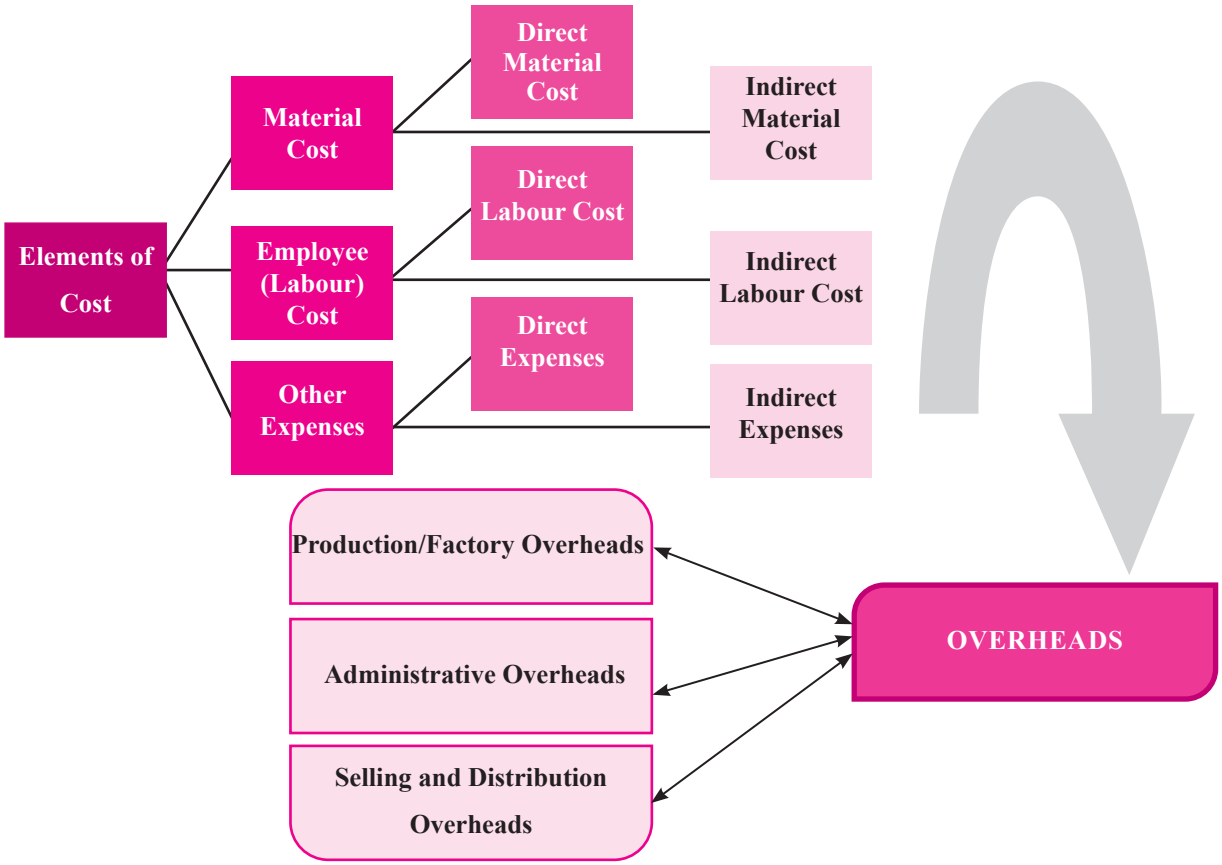


Figure 1.6: Classification of Elements of Cost into Direct and Indirect Costs

It is important to note that all the traceable costs (direct material, direct labour and direct expenses) are grouped together and is referred as prime cost.

Para 4.26 of CAS 1 defines Prime cost as the aggregate of direct material cost, direct employee cost and direct expenses.

Thus,

Prime Cost = Direct Material Cost + Direct Labour (Employee) + Direct Expenses

It was previously noted in this study note, that the traditional cost accounting system is the absorption costing system which is, more frequently used. Under generally accepted accounting principles (GAAP), absorption costing is required for external reporting. This is an accounting method that captures all of the costs involved in manufacturing a product when valuing inventory. The method includes direct costs and indirect costs and is helpful in determining the cost to produce one unit of goods[32]. thus, absorption costing also referred as full costing or traditional costing is GAAP compliant.

[32] https://corporatefinanceinstitute.com/resources/knowledge/accounting/absorption-costing-guide/

Classification of Cost

1.4

Cost Classification is the process of segregating the company's costs into different categories that gives a fair idea to the decision-maker about the spending pattern. This bifurcation allows teams to efficiently use the data for accounting purposes and financial modelling, leading the management to decide which cost is more important than others.

The Cost Accounting Standard (CAS) 1 (Revised 2015) issued by the Council of the Institute of Cost Accountants of India for determination of Classification of Cost. This section of the study note is in tandem with the provisions of the said document.

Para 4.3 CAS 1 state that classification of cost as the arrangement of items of costs in logical groups having regard to their nature (subjective classification) and purpose (objective classification).

Thus, two type of classification (logical groups) is recommended

- Subjective classification (classification on the basis of nature) and
- Objective classification (on the basis of purpose)

A reading of para 6 of CAS 1 suggest five classifications along with some sub classifications, which is represented below:

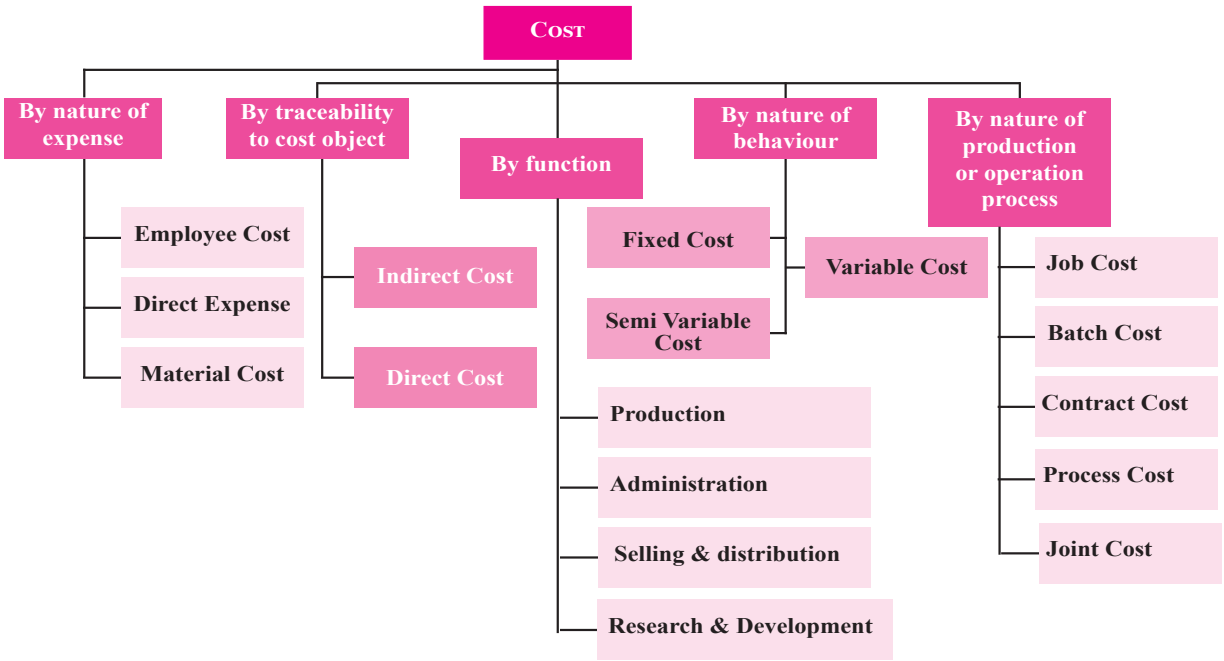


Figure 1.8: Types of Cost Classification

1. **Classification by nature of expense** (para 6.1) – on the basis of nature of the expense the elements of cost can be classified in the following three categories:
   a. Material – Material Costs are cost of materials used for the purpose of production of a product or rendering of a service, net of trade discounts, rebates, taxes and duties refundable that can be quantified with reasonable accuracy.
   b. Employee - Employee Costs are consideration, including benefits paid or payable to employees, permanent or temporary, for the purpose of production of a product or rendering of a service.
   c. Expenses - Expenses are costs other than material cost and employee cost for the purpose of production of a product or rendering of a service. (example - cost of utilities, payment for bought out services, job processing charge)
2. **Classification by traceability of the cost to a cost object** (para 6.2) – on the basis of traceability costs are either direct cost or indirect cost.
   a. Direct cost - If a cost can be assigned to a cost object in an economically feasible way, it shall be termed as direct to that cost object. These are of three types
      i. Direct material cost - Direct Material Costs are the cost of materials which can be assigned to a cost object in an economically feasible way.
      ii. Direct employee cost - Direct Employee Cost are employee costs, which can be assigned to a cost object in an economically feasible way.
      iii. Direct expenses - Direct Expenses are expenses except direct material and direct employee cost which can be assigned to a cost object.
   b. Indirect cost – if a cost is not identifiable as a direct cost then it is referred as indirect cost. It comprises of the following.
      i. Indirect material - Indirect Material Costs are cost of materials, which cannot be directly assigned to a particular cost object in an economically feasible way
      ii. Indirect employee cost - Indirect Employee costs are employee costs, which cannot be directly assigned to a particular cost object in an economically feasible way.
      iii. Indirect expenses - Indirect Expenses are expenses, which cannot be directly assigned to a particular cost object in an economically feasible way.
3. **Classification by function** (para 6.3) – costs can be classified according the functions which are
   a. Production;
   b. Administration;
   c. Selling;
   d. Distribution;
   e. Research; and
   f. Development
4. **Classification by nature of behaviour of the cost** (para 6.4) - Costs shall be classified based on behaviour in response to the changes in the activity levels such as, fixed cost, variable cost and semi-variable cost. Accordingly, costs are
   a. Fixed cost
   b. Variable cost
   c. Semi variable cost

5. **Classification by nature of production or operation process** (para 6.5) - Costs shall also be classified on the basis of nature of production or operation process. Operation Cost shall be the cost a specific operation involved in production of goods or rendering of services. Accordingly, costs are

   a. Job cost

   b. Batch cost

   c. Contract cost

   d. Process cost

   e. Joint costs are the costs of common resources used for producing two or more products or rendering two or more services simultaneously

A diagram regarding the types of classification is presented for easy comprehension.

1.4.1. Cost Behaviour Analysis

It is discussed in the previous section that costs can be classified according to its behaviour. Cost behavior analysis refers to management's attempt to understand how operating costs change in relation to a change in an organization's level of activity. These costs may include direct materials, direct labour, and overheads costs that are incurred in developing a product. Management typically performs cost behavior analysis through mathematical cost functions.

Cost functions are descriptions of how a cost (e.g., material, labour, or overheads) changes with changes in the level of activity relating to that cost. For example, total variable costs will change in relation to increased activity, while fixed costs will remain the same. Cost functions may come in various forms.

CIMA Official Terminology states that cost behaviour is the Variability of input costs with activity undertaken. Cost may increase proportionately with increasing activity (a variable cost), or it may not change with increased activity (a fixed cost). Some costs (semi-variable) may have both variable and fixed elements. Other behaviour is possible; costs may increase more or less than in direct proportion, and there may be step changes in cost, for example. To a large extent, cost behaviour will be dependent on the timescale assumed.

The level of activity refers to the amount of work done, or the number of events that have occurred. Depending on circumstances, the level of activity may refer to the volume of production in a period or the number of units sold. From the above discussion it is obvious that, in general, three types of costs is noticed. It is very important to understand the nature of the cost. As the treatment of fixed cost and variable cost is different in the two most important cost accounting systems: absorption costing and marginal costing. And as such semi –variable cost cannot be allowed to remain and should be segregated into fixed and semi –variable cost.

1. **Fixed cost** – fixed cost is referred as period and refers to a cost which is incurred for a particular period. It remains fixed over a relevant range[35]. GACAP defines fixed costs as costs which do not vary with the change in the volume of activity. Fixed indirect costs are termed fixed overheads.

   CIMA Official Terminology defines a fixed cost as a cost incurred for an accounting period, that, within certain output or turnover limits, tends to be unaffected by fluctuations in the levels of activity (output or turnover).

   Total fixed cost remains while per unit fixed cost reduces as number of units increases (a diagrammatic representation is shown below)

2. **Variable cost** – the variable cost is often referred as the product cost. The per unit variable cost remains fixed over the relevant range. GACAP defines variable Costs are the cost which tend to directly vary with the volume of activity. CIMA official terminology defines variable cost as a cost that varies with a measure of activity.

[35] The relevant range is Activity levels within which assumptions about cost behaviour in breakeven analysis remain valid. This is discussed in details in Module 6 of this study note.

3. **Semi-variable cost** – this are dual natured. A part of these cost remains fixed while the other part behaves as a variable cost. CIMA official terminology defines a semi-variable cost as a cost containing both fixed and variable components and thus partly affected by a change in the level of activity.

The following five figures (1 -5) is a pictorial representation of the costs discussed above.

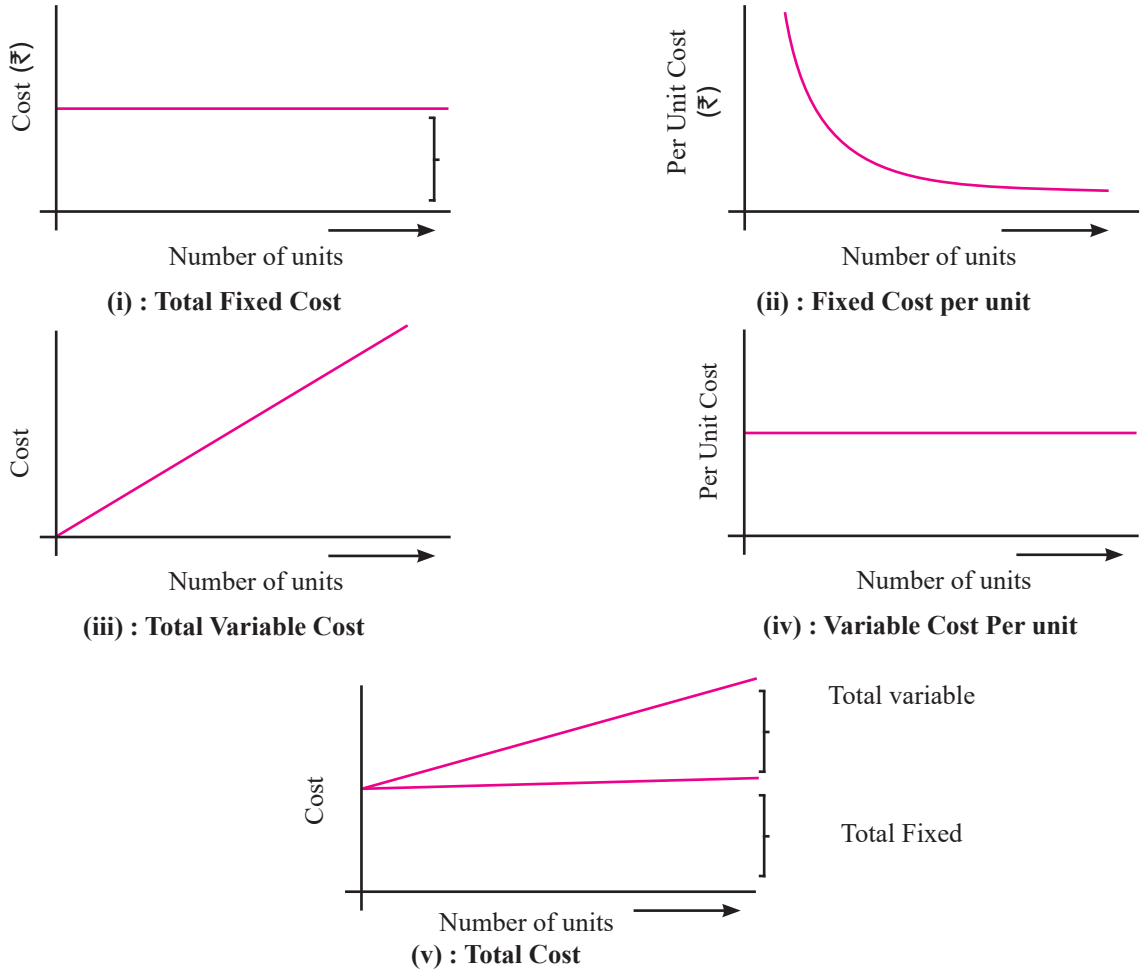


Figure 1.9: Graphical Representation of Different Total Costs and per unit costs under Cost Behaviour Analysis

Figure (i): total fixed cost remains fixed and does not change as number of units is increased. This holds good within the relevant range.

Figure (ii): the per unit fixed cost curve is a rectangular hyperbola and reduces as number of units produced increases.

Figure (iii): total variable cost increases at a steady rate as units produced increases.

Figure (iv): the per unit variable cost is a straight line parallel to the X axis. This is one basic assumption which shall have to hold good during the relevant range.

Figure (v): total cost curve comprising of fixed cost and variable cost is represented in this figure. This may be also represented as a straight-line curve where the fixed cost is the Y – intercept and the variable cost per unit is the m (slope of the total cost function).

1.4.2 Segregation of Semi Variable Costs

In both absorption costing system and marginal costing system costs must be identified as fixed cost or variable cost as their treatment differs because their nature differs. Thus semi –variable costs are not allowed to remain as they are. These costs are to be segregated into its component parts; fixed portion and variable portion. When managers have identified a semi-variable cost they will need to know how much of it is fixed and how much is variable. Only when they have determined this will they be able to estimate the cost to be incurred at relevant activity levels. Past records of costs and their associated activity levels are usually used to carry out the analysis. Before segregation of semi-variable costs, managers need to identify the same semi variable cost. The below illustration would clarify the issue.

Illustration 2

Let us assume that a company identified two sets of costs for two consequent months which are as follows.

January 2022, 60 tables are produced with total cost of ₹ 1,700

February 2022, 70 tables are produced with total cost of ₹ 1,900

It is a given fact that total fixed costs don't change within the relevant range with increase in units produced. So, the increase in total cost of ₹ 200 (₹ 1,900 - ₹ 1,700) during January –February is caused by an increase of 10 units (70 tables – 60 tables)

This is given as

₹ 1,900 – ₹ 1,700 = ₹ 200 (change in costs) (increase).

70 tables – 60 tables = 10 (changes in tables) (increase)

Thus, variable cost per unit = $\frac{₹\ 200}{10\ \text{units}}$ = ₹ 20 per table

Thus, the total cost is semi variable in nature as there are both fixed and variable element in the total cost of producing table.

If the total cost is variable, then in January the total cost would be ₹ 1,200 (60 × 20) and in February the total cost would be ₹ 1,400 (70 × 20), which they are not. The TC in January is Rs 1700 and in February it is ₹ 1,900.

Given, total cost = total variable costs + total fixed costs

For January (60 tables)

TC = TVC + TFC = (Variable cost per unit × number of units) + TFC

$\Rightarrow$ 1700 = (20 × 60) + TFC

$\Rightarrow$ TFC = 1700 -1200 = 500

Check (for February) (70 tables)

TC = TVC + TFC = Variable cost per unit × number of units + TFC

$\Rightarrow$ 1900 = 20 × 70 + 500

$\Rightarrow$ LHS = RHS

In other words, the cost function is given as

TC = TVC + TFC = (Variable cost per unit × number of units) + TFC

$Y = m \times x + C$

Where Y = TC, m = slope of the cost function (variable cost per unit) and

C = y intercept (total fixed cost)

Where,

$$m = \frac{\text{Rise}}{\text{Run}} = \frac{y_2 - y_1}{x_2 - x_1} = \frac{\text{Change in TC}}{\text{Change in output}}$$

The four most common methods[36] used to separate the fixed and variable elements are as follows

1. **Graphical Method** – This method takes account of all available historical data and it is very simple to use. However, it is very prone to inaccuracies that arise due to subjectivity and the likelihood of human error.

   a. First a scatter graph is drawn which plots all available pairs of data on a graph.

   b. Then a line of best fit is drawn by eye. This is the line which, in the judgement of the user, appears to be the best representation of the gradient of the sets of points on the graph.

   c. The point where the extrapolation of this line cuts the vertical axis (the intercept) is then read off as the total fixed cost element. The variable cost per unit is given by the gradient of the line

2. **High and Low Method –** The highest and lowest levels of output and costs are taken and the differential is found. This difference arises only due to variable costs. The remaining portion will be fixed costs. Under this method the variable cost per unit will be computed first and then the fixed cost will be derived. Variable cost per unit is computed by dividing the difference in cost at highest level and lowest level with the difference in volume between highest and lowest level.

   CIMA official terminology defines the high low method as a method of estimating cost behaviour by comparing the total costs associated with two different levels of output. The difference in costs is assumed to be caused by variable costs increasing, allowing unit variable cost to be calculated. Following from this, since total cost is known, the fixed cost can be derived.

3. **Linear Equation Method –** This uses the straight-line equation of y = m x + c where y represents total cost, m is variable cost per unit, x is the level of output and c is fixed costs. The total costs at two different volumes are put into these equations which are solved for the values of m and c.

4. **Least Square Method –** This statistical tool uses straight line equation and finds the line of best fit to solve the equations. Also known as Simple Regression Method. Under this method first the mean of volume and mean of costs are computed. The deviations in volume (X) from the mean and deviation in cost (Y) from mean are computed.

[36] These are discussed in details in later part of the study note.

Illustration 3 (Segregation of Semi-Variable Cost (High/Low Method and linear equation method)

The costs of operating the maintenance department of a computer manufacturer, XYZ Company, for the last four months have been as follows.

Month	Cost (₹)	Production volume (Units)
1	1,10,000	7,000
2	1,15,000	8,000
3	1,11,000	7,700
4	97,000	6,000

High/low method

Variable cost P.U. = $\frac{\text{Change in Total Cost}}{\text{Change in output}}$ (consider only the highest and the lowest points)

therefore

High	8000 units	₹ 1,15,000
Low	6000 units	₹ 97,000
Change	2000 units	₹ 18,000

Variable cost P.U = $\frac{\text{Change in Total Cost}}{\text{Change in output}} = \frac{₹\ 18,000}{2000 \text{ units}} = ₹\ 9$ per unit

Calcualtion of Fixed cost element (substituting value of VC in high point and low point)

	High point	Low point
Total Cost (given)	₹ 1,15,000	₹ 97,000
Variable Cost @ ₹ 9 per unit		
8000 × ₹ 9; 6000 × ₹ 9	₹ 72,000	₹ 54,000
Fixed cost (balancing figure)	₹ 43,000	₹ 43,000

Linear equation method

The Total Cost function is given as

TC = TVC + TFC = Variable cost per unit × number of units + TFC

$Y = m \times x + C$

Where Y = TC, m = slope of the cost function (variable cost per unit) and

C = y intercept (total fixed cost)

Where,

$$m = \frac{\text{Rise}}{\text{Run}} = \frac{y_2 - y_1}{x_2 - x_1} = \frac{\text{Change in Total Cost}}{\text{Change in output}}$$

$$m = \text{variable cost per unit} = \frac{y_2 - y_1}{x_2 - x_1} = \frac{\text{Change in Total Cost}}{\text{Change in output}} = \frac{₹\ 18,000}{2000 \text{ units}} = ₹\ 9 \text{ per unit.}$$

At 8000 units of production

Variable cost = 8000 units × ₹ 9 per unit = ₹ 72,000

Fixed cost (Balancing Figure) = ₹ 43,000

Total Cost (given) = ₹ 1,15,000

Thus the total cost function is given as

Y = 9x + 43000

TC = Variable cost per unit × units produced + Total fixed cost

Preparation of Cost Sheet and Ascertainment of Profit

1.5

A cost sheet, also referred as statement of cost, is a statement that shows the various components of total cost for a product and shows previous data for comparison. The selling price (after adding certain percentage of profit to the cost) can be deduced for a product based on the cost sheet. It is depiction of the cost accumulation process of a single output based on a single cost unit. An estimated cost sheet is prepared based on estimated cost just before the production begins.

Under absorption costing system, direct material, direct labour, direct expenses, fixed and variable production overheads are considered as composing the factory (works) cost. Administrative overheads added to works cost gives the cost of production. Selling and distribution overheads adds to cost of production to give the cost of sales.

The term conversion cost is used to represent the cost of converting raw material into finished goods. Thus conversion cost is the sum of direct labour cost, direct expenses and production overheads. Cost sheet shows the operating results.

Importance and objectives of cost sheet

Cost sheets help with a number of essential business processes:

1. **Determining cost:** The main objective of the cost sheet is to obtain an accurate product cost. Both the total cost and cost per unit of a product is calculated with accuracy.
2. **Fixing selling price:** The cost sheet furnishes the production cost which helps fixation of selling price.
3. **Cost comparison:** It helps the management compare the current cost of a product with a previous per unit cost for the same product. Comparing the costs helps management take corrective measures if costs have increased.
4. **Cost control:** The cost sheet is an important document for a manufacturing unit, as it helps in controlling production costs. Using an estimated cost sheet aids in monitoring labour, material and overheads costs at each step of production.
5. **Decision-making:** Some of the most important decisions management makes are based on the cost sheet. Whenever a business needs to produce or buy a component, or quote prices for its goods on a tender, managers refer to the cost sheet.
6. Inter-firm and intra-firm comparison

Grouping of costs[37]

By grouping of the above elements of cost, the following divisions of cost are obtained:

1. Prime Cost = Direct Materials + Direct Labour + Direct Expenses
2. Works Cost (Factory) = Prime Cost + Factory Overheads
3. Cost of Production = Works (Factory) Cost + Office and Administrative Overheads
4. Cost of Sales = Cost of Production + Selling and Distribution Overheads

[37] There is no standard format for presentation of costs in a cost sheet. It has to suit the type of business, need of the details, and management's requirement of control over costs. Thus the format presented in this section is only a suitable way. This is adopted from Principles and Practice of Cost Accounting (3rd edition) by Asish Bhattacharya. An alternative is presented in the book itself.

In a manufacturing concern, inventory (stock) comprises of

1. Raw material stock – this is adjusted at the raw material consumed stage
2. Work in progress stock – this is generally adjusted at the works cost stage unless otherwise stated.
3. Finished goods stock – this is adjusted in the cost or production stage.

Thus the above simple grouping may be restated as

1. Prime Cost

Details	(₹)	(₹)
Opening Stock of Raw Material	**	
Add: Purchase of Raw Material	**	
Less: Closing Stock of Raw Material	**	
Add: Direct charges related to Raw Material	**	
Raw Material Consumed		**
Direct Labour		**
Direct Expenses		**
Prime Cost		**

2. Works (factory) cost

Details	(₹)	(₹)
Prime Cost		**
Add: Production Overheads		**
Works (factory) cost		**
Opening Stock of WIP	**	
Less: Closing Stock of WIP	**	**
Adjusted Work (factory) cost		**

3. Cost of production and Cost of goods sold

Details	(₹)	(₹)
Adjusted Work (factory) cost		**
Add: Administrative overheads		**
Cost of Production		**
Add: Opening Stock of Finished Goods	**	
Less: Closing Stock of Finished Goods	**	**
Cost of Goods Sold		**

4. Cost of Sales

Details	(₹)	(₹)
Cost of Goods Sold		**
Add: Selling and Distribution Overheads		**
Cost of Sales		**

5. Statement of Profit

Details	(₹)	(₹)
Cost of Sales		**
Add: Profit (as a percentage of cost of sales or as a percentage of sales)		**
Sales		**

It is imperative to note that cost of goods sold is the costs assigned to the units sold. Whereas cost of sales is the total of production costs assigned to units sold plus selling and distribution expenses. It is interesting to note that as per paragraph 13 (c) of AS 2, administrative cost do not form part of cost of production[38].

Cost Treatment of Goods & Service Tax (GST):

A. On Recurring/Revenue Expenses:

Example: Raw Materials Purchase:

Purchase of Cement from M/s X & Co

Cement	10 Bags	@ ₹ 100/- per Bag	₹ 1000.00
CGST (9%)			₹ 90.00
SGST (9%)			₹ 90.00
Total			₹ 1180.00

i. If the Buyer (M/s Y & Co.) is GST Registered Firm:

In it's Books, the journal entry will be:

Cement/ Purchase A/c	Dr.	1,000.00	
Input CGST A/c	Dr.	90.00	
Input SGST A/c	Dr.	90.00	
To M/s X & Co			1,180.00

Cost Treatment:

Profit & Loss Account/ Cost Sheet				Balance Sheet			
Dr.	Amount	Cr.	Amount	Liabilities	Amount	Assets	Amount
To Purchase/ Cost of Materials Consumed/ Material Cost	1,000	Cl. Stock/ WIP	1,000	M/s X & Co	1,180	Cl. Stock/ WIP	1,000
						Input CGST 9%	90
						Input SGST 9%	90
Total	1,000		1,000		1,180		1,180

38. AS 2 states in determining the cost of inventories it is appropriate to exclude certain costs and recognise them as expenses in the period in which they are incurred. This includes ……. (c) administrative overheads that do not contribute to bringing the inventories to their present location and condition; If cost sheet is prepared accordingly, then administrative overheads is to be added after calculating the Cost of Production. In this study note, this has not been followed. Rather the traditional presentation of cost sheet is followed.

ii. If the Buyer (M/s Y & Co.) is not a GST Registered Firm/ End User:

In it's Books, the journal entry will be:

Cement/ Purchase A/c	Dr.	1,180.00	
To M/s X & Co			1,180.00

Cost Treatment:

Profit & Loss Account/ Cost Sheet				Balance Sheet			
Dr.	Amount	Cr.	Amount	Liabilities	Amount	Assets	Amount
To Purchase/ Cost of Materials Consumed/ Material Cost	1,180	Cl. Stock/ WIP	1,180	M/s X & Co	1,180	Cl. Stock/ WIP	1,180
Total	1,180		1,180		1,180		1,180

B. On Capital Expenses Expenses on which ITC is available (Ex: Plant & Machinary):

Example: Purchase of Machinery:

Purchase of Machinery from M/s X & Co

Machinery	1 Nos	₹ 1000.00
CGST (9%)		₹ 90.00
SGST (9%)		₹ 90.00
Total		₹ 1180.00

i. If the Buyer (M/s Y & Co.) is GST Registered Firm:

In it's Books, the journal entry will be:

Machinery A/c	Dr.	1,000.00	
Input CGST A/c	Dr.	90.00	
Input SGST A/c	Dr.	90.00	
To M/s X & Co			1,180.00

Cost Treatment:

Depreciation A/c	Dr.	100.00	
To Machinery A/c			100.00

Profit & Loss Account/ Cost Sheet				Balance Sheet			
Dr.	Amount	Cr.	Amount	Liabilities	Amount	Assets	Amount
To Depreciation (10% of ₹ 1,000/-)	100	By Loss	100	M/s X & Co	1,180	WDV of Machinery	900
						Input CGST 9%	90
						Input SGST 9%	90
						Profit & Loss A/c	100
Total	100		100		1,180		1,180

ii. If the Buyer (M/s Y & Co.) is not GST Registered Firm/ End User:

In it's Books, the journal entry will be:

Machinery A/c	Dr	1,180.00	
To M/s X & Co			1,180.00

Cost Treatment:

Depreciation A/c	Dr	118.00	
To Machinery A/c			118.00

Profit & Loss Account/ Cost Sheet				Balance Sheet			
Dr.	Amount	Cr.	Amount	Liabilities	Amount	Assets	Amount
To Depreciation (10% of ₹ 1180/-)	118	By Loss	118	M/s X & Co	1,180	WDV of Machinery	1,062
						Profit & Loss A/c	118
Total	118		118		1,180		1,180

C. On Capital Expenses on which ITC is not available (Ex: Mobile):

Example: Purchase of Mobile:

Purchase of Machinery from M/s X & Co

Mobile	1 Nos	₹ 1,000.00
CGST (9%)		₹ 90.00
SGST (9%)		₹ 90.00
Total		₹ 1180.00

iii. If the Buyer (M/s Y & Co.):

In it's Books, the journal entry will be:

Mobile A/c	Dr	1,180.00	
To M/s X & Co			1,180.00

Cost Treatment:

Depreciation A/c	Dr	118.00	
To Machinery A/c			118.00

Profit & Loss Account/ Cost Sheet				Balance Sheet			
Dr.	Amount	Cr.	Amount	Liabilities	Amount	Assets	Amount
To Depreciation (10% of ₹ 1180/-)	118	By Loss	118	M/s X & Co	1,180	WDV of Mobile	1,062
						Profit & Loss A/c	118
Total	118		118		1,180		1,180

Conclusion:

Cost Treatment of GST depends on following factors:

1. Status of the Organisation (GST Registered or Not)
2. Depends on Nature of Expenses (Revenue or Capital)
3. ITC on GST is applicable or Not.

Illustration 4

MNQ LLP submits the following information on 31st March 2022. Based on the given data prepare a statement of cost.

Details	₹
Sales for the year	2,75,000
Inventories at the beginning of the year: Finished goods	7,000
Work in Progress	4,000
Purchase of the material for the year	1,10,000
Material inventory: At the beginning of the year	3,000
At the end of the year	4,000
Direct Labour	65,000
Factory overheads: 60% of direct labour cost	
Inventories at the end of the year: Finished goods	8,000
Work in Progress	6,000
Other expenses for year:	
Selling expenses - 10% of sales	
Administrative expense – 5% of sales	

Solution

Details	₹	₹
Inventory (RM) at the beginning of the year		
Add Purchase of RM during the year	3,000	
	1,10,000	
Less Inventory (RM) at the end of the year	1,13,000	
	(4,000)	
Material consumed		**1,09,000**
Add Direct Labour		65,000
Prime Cost		**1,74,000**
Add Factory Overheads @ 60% of direct labour		39,000
Works Cost		**2,13,000**
Adjustment for work in progress		
Opening WIP	4,000	
Less Closing WIP	(6,000)	(2,000)
		2,11,000
Add Administrative Overheads		
@ 5% of Sales (275000)		13,750
Cost of Production		**2,24,750**
Adjustment for Finished goods		
Opening Stock of Finished Goods	7,000	
Less Closing stock of Finished Goods	(8,000)	(1,000)
Cost of goods sold		**2,23,750**
Selling overheads		
@ 10% of sales (275000)		27,500
Cost of Sales		**2,51,250**
Profit (Balancing figure)		**23,750**
Sales		**2,75,000**

Illustration 5

X Ltd Provides you the following figures for the year 2021-22:

Details	Amount (₹)
Direct Material	3,20,000
Direct Wages	8,00,000
Production Overheads (25% variable)	4,80,000
Administration Overheads (75% fixed)	1,60,000
Selling and Distribution Overheads ($^{2}/_{3rd}$ fixed)	2,40,000
Sales @ ₹ 125 per unit	25,00,000

For the year 2022-23, it is estimated that:

1. Output and sales quantity will increase by 20% by incurring additional advertisement expenses of ₹ 45,200.
2. Material prices will go up 10%.
3. Wage Rate will go up by 5% along with, increase in overall direct labour efficiency by 12%.
4. Variable Overheads will increase by 5%.
5. Fixed Production Overheads will increase by $33^{1}/_{3}$%.

Required:

a) Calculate the Cost of Sales for the year 2021-22 and 2022-23.

b) Find out the new selling price for the year 2022-23.

   i) If the same amount of profit is to be earned as in 2021-22.

   ii) If the same percentage of profit to sales is to be earned as in 2021-22.

   iii) If the existing percentage of profit to sales is to be increased by 25%.

   iv) If Profit per unit ₹10 is to be earned.

Solution:

a) Computation of Cost of Sales for the year 2021-22 and 2022-23

	2021-22	2022-23	
Sales Unit	$= \frac{₹25,00,000}{₹125} = 20,000$	20,000 × 120% = 24,000	
Direct Material Cost	3,20,000	3,20,000×120%×110%	4,22,400
Direct Wages	8,00,000	$8,00,000 \times 120\% \times 105\% \times \frac{100}{112}$	9,00,000
Prime Cost	**11,20,000**		**13,22,400**
Add: Variable Production OH	4,80,000 × 25% = 1,20,000	1,20,000 × 120% × 105%	1,51,200
Fixed Production OH	4,80,000 × 75% = 3,60,000	3,60,000 × $133^{1}/_{3}$%	4,80,000
Works Cost	**16,00,000**		**19,53,600**
Add: Variable Administrative OH	1,60,000 × 25% = 40,000	40,000 × 120% × 105%	50,400
Fixed Administrative OH	1,60,000 × 75% = 1,20,000		1,20,000
Cost of Production	**17,60,000**		**21,24,000**

Add: Variable S&D OH	$^1/_3 \times 2,40,000 = 80,000$	$80,000 \times 120\% \times 105\%$	1,00,800
Fixed S & D OH	$^2/_3 \times 2,40,000 = 1,60,000$		1,60,000
Advertisement Exp.			45,200
Cost of Sales	**20,00,000**		**24,30,000**

b) i) Selling Price of 2022-23 if same amount of profit is to be earned as in 2021-22

$$= \frac{\text{Cost of Sales + Expected Profit}}{\text{No. of Sales Unit}} = \frac{24,30,000 + 5,00,000}{24,000} = ₹\ 122.08$$

Profit for the year 2021-22 = Sales – Cost of Sales = 25,00,000 – 20,00,000 = ₹5,00,000

ii) Selling Price of 2022-23 if the same percentage of profit to sales is to be earned as in 2021-22

Percentage of Profit to Sales in 2021-22 $= \frac{5,00,000}{25,00,000} \times 100 = 20\%$

Cost of Sales + Profit = Sales

or, 24,30,000 + 20% of Sales = Sales

or, Sales $= \frac{24,30,000}{80\%} = ₹30,37,500$

Selling Price per unit $= \frac{₹30,37,500}{24,000} = ₹\ 126.5625$

iii) Selling Price of 2022-23 if the existing profit to sales percentage is increased by 25%

$\therefore$ Profit to Sales percentage = 20 + 25% × 20 = 25%

Cost of Sales + Profit = Sales

or, 24,30,000 + 25% of Sales = Sales

or, Sales $= \frac{24,30,000}{75\%} = ₹\ 32,40,000$

Selling Price per unit $= \frac{₹32,40,000}{24,000} = ₹\ 135$

iv) Selling Price of 2022-23 if profit per unit of ₹10 is to be earned

Sales = 24,30,000 + 10 × 24,000 = ₹26,70,000

Selling Price per unit $= \frac{₹26,70,000}{24,000} = ₹111.25$

Illustration 6

The following are the costing records for the year 2021 of a manufacturer:

Production 10,000 units; Cost of Raw Materials ₹2,00,000; Labour Cost ₹1,20,000; Factory Overheads ₹ 80,000; Office Overheads ₹40,000; Selling Expenses ₹10,000, Rate of Profit 25% on the Selling Price.

The manufacturer decided to produce 15,000 units in 2022. It is estimated that the cost of raw materials will increase by 20%, the labour cost will increase by 10%, 50% of the overheads charges are fixed and the other 50% are variable. The selling expenses per unit will be reduced by 20%. The rate of profit will remain the same.

Prepare a Cost Statement for the year 2022 showing the total profit and selling price per unit.

Solution:

Cost Sheet for the year 2021

Production Unit	10,000		
		Cost per unit ₹	Total ₹
Direct Material	$\frac{2,00,000}{10,000}$ = ₹ 20	20	2,00,000
Labour Cost	$\frac{1,20,000}{10,000}$ = ₹ 12	12	1,20,000
Prime Cost		**32**	**3,20,000**
Add: Factory OH			
Variable 80,000 × 50%	$\frac{40,000}{10,000}$ = ₹ 4	4	40,000
Fixed 80,000 × 50%		4	40,000
Works Cost		**40**	**4,00,000**
Add: Office OH			
Variable 40,000 × 50%	$\frac{20,000}{10,000}$ = ₹ 2	2	20,000
Fixed 40,000 × 50%		2	20,000
Cost of Production		**44**	**4,40,000**
Add: S & D OH	$\frac{10,000}{10,000}$ = ₹ 1	1	10,000
Cost of Sales		**45**	**4,50,000**
Add: Profit (Bal. fig.)		15	1,50,000
Sales	(WN 1)	**60**	**6,00,000**

Working Notes:

1. Computation of Selling Price of 2021

Cost of Sales + Profit = Sales

or, 4,50,000 + 25% of Sales = Sales

or, Sales = $\frac{4,50,000}{75\%}$ = ₹ 6,00,000

∴ Selling Price per unit = $\frac{6,00,000}{10,000}$ = ₹ 60

Cost Sheet for the year 2022

Production Unit	15,000		
		Total ₹	Cost per unit ₹
Direct Material	15,000 × (20 × 120%) = 15,000 × 24	3,60,000	24.00
Labour Cost	15,000 × (12 × 110%) = 15,000 ×13.20	1,98,000	13.20
Prime Cost		**5,58,000**	**37.20**
Add: Factory OH			
Variable	15,000 × 4	60,000	4

Fixed		40,000	2.67
Works Cost		**6,58,000**	**43.87**
Add: Office OH			
Variable	15,000 × 2	30,000	**2**
Fixed		20,000	1.33
Cost of Production		**7,08,000**	**47.20**
Add: S & D OH	15,000 × 1 × 80%	12,000	0.80
Cost of Sales		**7,20,000**	**48.00**
Add: Profit (Bal. fig.)		2,40,000	16
Sales (WN 2)	(WN 1)	**9,60,000**	**64**

Working Notes 2

Computation of Selling Price of 2022

Cost of Sales + Profit = Sales

or, 7,20,000 + 25% of Sales = Sales

or, Sales = $\frac{7,20,000}{75\%}$ = ₹ 9,60,000

∴ Selling Price per unit = $\frac{9,60,000}{15,000}$ = ₹ 64.

Illustration 7

Following data is available from the cost records of a company for the month of March 2022:

1. Opening stock of job as on 1st March 2022

   Job no. A 99: Direct Material - ₹80, Direct Wages - ₹150 and Factory Overheads - ₹200.

   Job no. A 77: Direct Material - ₹420, Direct Wages - ₹450 and Factory Overheads - ₹400.

2. Direct material issued during the month of March 2022 was:

   Job no. A 99 - ₹120

   Job no. A 77 - ₹280

   Job no. A 66 - ₹225

   Job no. A 55 - ₹300

3. Direct labour details for March 2022 were:

Job no.	Hours	Amount (₹)
A 99	400	600
A 77	200	450
A 66	300	675
A 55	100	225

4. Factory Overheads are applied to jobs on production according to direct labour hour rate which is ₹2.10 per hour.

5. Factory Overheads incurred in March 2022 were ₹2,100

6. Job numbers A 99 and A 77 were completed during the month. They were billed to the customers at a price which included 15% of the price of the job for Selling & Distribution expenses and another 10% of the price for Profit.

Prepare

a. Job Cost Sheet for Job No. A 77 and A 99.

b. Determine the selling price for the jobs.

c. Calculate the value of work in process.

Solution:

Working Notes

1. The Factory Overheads actually incurred are ₹2,100. This amount to be apportioned on the basis of labour hours. So, the rate to be considered as ₹ 2.10 per unit ($=\frac{₹\ 2,100}{1,000\ \text{hours}}$) and not ₹ 2 per unit. If we consider the above mentioned point the calculations for Job Sheets and for the work in progress will change accordingly.
2. Work in progress is to be calculated for the incomplete jobs hence job no. A 66 and A 55 should only be included in the calculations of work in progress.

a. Job Cost Sheets for the month of March 2022

Cost Items	Job A 77 Amount (₹)		Job A 99 Amount (₹)	
Direct Material Issued		280		120
Direct Labour		450		600
Prime Cost		730		720
Add: Factory Overheads	2.10 x 200 =	420	2.10 x 400	840
Add: Opening WIP	420 + 450 + 400 =	1,270	80 + 150 + 200 =	430
Factory Cost		2,420		1,990
Add: S&D Overheads (WN 1)		484		398
Cost of Sales		2,904		2,388
Add: Profit (WN 1)		323		265
b) Selling Price		**3,227**		**2,653**

Working Note

1. Factory cost + Selling & Distribution Overheads + Profit = Selling Price

Job A 77

Let Selling Price be ₹x

∴ Selling & Distribution Overheads = 15% × Selling Price = 0.15x

and, Profit = 10% × Selling Price = 0.10x

or, 2,420 + 0.15x + 0.10x = x

or, $x = \frac{2,420}{0.75} = ₹\ 3,227$

∴ Selling & Distribution Overheads = 0.15 × 3,227 = ₹484

and, Profit = 0.10 × 3,227 = ₹323

Similarly

Selling Price of Job 99 $= \frac{₹\ 1,990}{0.75} = ₹\ 2,653$

∴ Selling & Distribution Overheads = 0.15 × 2,653 = ₹398

and, Profit = 0.10 × 2,653 = ₹265

c) Calculation of Closing Work in Progress of Job A 55 and A 66

	Job A 55 Amount (₹)	Job A 66 Amount (₹)
Direct Material Issued	300	225
Direct Labour	225	675
Prime Cost	525	900
Add: Factory Overheads	100 × 2.10 = 210	300 × 2.10 = 630
Value of Work in Progress	735	1,530

∴ Total Value of Work in Progress = 735 + 1,530 = ₹2,265

Illustration 8

Prepare Cost Sheet for an engineering company which produces standard components in batches of 1,000 pieces each. A batch passes through three processes viz. Foundry, Machining and Assembly.

The materials used for a batch number 001 were: Foundry 1,300 tonnes @ ₹ 50 per tonne of which 50 tonnes were sent back to stores.

Other details

Process	Direct Labour	Overheads
Foundry	200 Hours @ ₹10	₹15 per Labour Hour
Machining	100 Hours @ ₹5	₹20 per Labour Hour
Assembly	100 Hours @ ₹15	₹10 per Labour Hour

A comparison of actual costs with estimated cost discloses that material and overheads have exceeded the estimates by 20% whereas the estimated labour cost is 10% more than the actual. Show the variances with respect to the estimates.

Solution:

Cost sheet for the batch no. 001

Standard batch size of 1,000 pieces

Cost Items	Actual ₹		Estimated ₹		Variance ₹	Favourable / Adverse
Direct Material	1,250 × 50	62,500	$62,500 \times \frac{100}{120}$	52,083	10,417	A
Direct Labour Foundry	200 × 10	2,000	$2,000 \times \frac{110}{100}$	2,200	200	F
Machining	100 × 5	500	$500 \times \frac{110}{100}$	550	50	F
Assembly	100 × 15	1,500	$1,500 \times \frac{110}{100}$	1,650	150	F
Prime Cost		**66,500**		**56,483**	**10,017**	**A**

Add: Factory Overheads Foundry	200 × 15	3,000	$3,000 \times \frac{100}{120}$	2,500	500	A
Machining	100 × 20	2,000	$2,000 \times \frac{100}{120}$	1,667	333	A
Assembly	100 × 10	1,000	$1,000 \times \frac{100}{120}$	833	167	A
Factory Cost		**72,500**		**61,483**	**11,017**	**A**

Working Note

1. For Material and Factory Overheads

   Actual cost is 20% excess than Estimated cost

   Let Estimated cost be x

   $\therefore$ x + 20%x = 62,500 (Actual Material Cost)

   or, $x = 62,500 \times \frac{100}{120}$ = ₹ 52,083 (Estimated Material Cost)

   Similarly, Factory Overheads cost has been calculated

2. For Direct Labour

   Estimated Cost is 10% more than Actual Cost

   So, Estimated Cost = Actual Cost $\times \frac{110}{100}$

Illustration 9

An advertising agency has received an enquiry for which you are supposed to submit the quotation. Bill of material prepared by the production department for the job states the following requirement of material:

Paper 10 reams @ ₹1,800 per ream

Ink and other printing material ₹ 5,000

Binding material & other consumables ₹ 3,000

Some photography is required for the job. The agency does not have a photographer as an employee. It decides to hire one by paying ₹10,000 to him. Estimated job card prepared by production department specifies that service of following employees will be required for this job:

Artist (₹12,000 per month) 80 hours

Copywriter (₹10,000 per month) 75 hours

Client servicing (₹9,000 per month) 30 hours

The primary packing material will be required to the tune of ₹4,000. Production Overheads 40% of direct cost, while the Selling & Distribution Overheads are likely to be 25% on Production Cost. The agency expects a profit of 20% on the quoted price. The agency works 25 days in a month and 6 hours a day.

Solution:

Quotation for a Printing Job

Items	Amount (₹)	Amount (₹)
Direct Material		
⅄ Paper	10 ×1,800 = 18,000	
⅄ Ink and other printing material	5,000	
⅄ Binding material & consumables	3,000	
⅄ Primary packing material	4,000	30,000
Direct Labour		
⅄ Photographer's Charge	10,000	
⅄ Artist (WN 1)	6,400	
⅄ Copywriter (WN 2)	5,000	
⅄ Client Servicing (WN 3)	1,800	23,200
Prime Cost		**53,200**
Add: Production Overheads	40% × 53,200	21,280
Factory Cost		**74,480**
Add: Selling & Distribution Overheads	25% × 74,480	18,620
Cost of Sales		**93,100**
Add: Profit (WN 4)		23,275
Price to be quoted		**1,16,375**

Working Notes:

1. Charge per month ₹ 12,000
   Working Hours per month (25 × 6) 150 hours
   Actual Hours worked 80
   ∴ Labour charge for Artist = $12,000 \times \frac{80}{150}$ = ₹ 6,400
2. Charge per month ₹ 10,000
   Working Hours per month (25 × 6) 150 hours
   Actual Hours worked 75
   ∴ Labour charge for Copywriter = $10,000 \times \frac{75}{150}$ = ₹ 5,000
3. Charge per month ₹ 9,000
   Working Hours per month (25 x 6) 150 hours
   Actual Hours worked 30
   ∴ Labour charge for Client servicing = $9,000 \times \frac{30}{150}$ = ₹ 1,800
4. Cost of Sales + Profit = Price to be quoted
   or, 93,100 + 20% × Price to be quoted = Price to be quoted
   or, Price to be quoted = $93,100 \times \frac{100}{80}$ = ₹ 1,16,375
   Profit = 1,16,375 – 93,100 = ₹23,275

Illustration 10

The following figures were extracted from the Trial Balance of a company as on 31st December, 2021.

Particulars	Debit Amount (₹)	Credit Amount (₹)
Inventories		
Raw Material	1,40,000	
Work in Progress	2,00,000	
Finished Goods	80,000	
Office Appliances	17,400	
Plant and Machinery	4,60,500	
Buildings	2,00,000	
Sales		7,68,000
Sales Returns	14,000	
Material Purchased	3,20,000	
Freight on materials	16,000	
Purchase Returns		4,800
Direct Labour	1,60,000	
Indirect Labour	18,000	
Factory Supervision	10,000	
Factory repairs and upkeep	14,000	
Heat, Light & Power	65,000	
Rates & Taxes	6,300	
Miscellaneous Factory Expenses	18,700	
Sales Commission	33,600	
Sales Travelling	11,000	
Sales Promotion	22,500	
Distribution Department Salaries and Wages	18,000	
Office Salaries	8,600	
Interest on borrowed funds	2,000	

Further details are given as follows:

Closing inventories are Material ₹1,80,000, Work in Progress ₹1,92,000 and Finished Goods ₹1,15,000.

Accrued expenses are Direct Labour ₹8,000, Indirect Labour ₹1,200 and Interest ₹2,000.

Depreciation should be provided as 5% on Office Appliances, 10% on Machinery and 4% on Buildings.

Heat, light and power are to be distributed in the ratio of 8: 1: 1 among factory, office and distribution respectively.

Rates & Taxes apply 2/3rd to the factory and 1/3rd to office.

Depreciation on building to be distributed in the ratio of 8: 1: 1 among factory, office and distribution respectively.

Prepare a Cost Sheet showing all important components and also a condensed Profit & Loss Account for the year.

Solution:

Particulars	Amount (₹)	Amount (₹)
Direct Materials		
Opening Stock of Raw Material	1,40,000	
Add: Purchases	3,20,000	
Add: Freight	16,000	
Less: Returns	4,800	
Less: Closing Stock	1,80,000	2,91,200
Direct Labour	1,60,000	
Add: Accrued	8,000	1,68,000
Prime Cost		**4,59,200**
Add: Factory Overheads		
Indirect Labour	18,000	
Add: Accrued indirect labour	1,200	
Factory supervision	10,000	
Factory Repairs & upkeep	14,000	
Heat, Light & Power (8/10 × 65,000)	52,000	
Rates & Taxes (2/3 × 6,300)	4,200	
Miscellaneous Factory Expenses	18,700	
Depreciation on Plant & Machinery (10% × 4,60,500)	46,050	
Depreciation on Buildings (8/10 × 4% × 2,00,000)	6,400	
	1,70,550	
Add: Opening WIP	2,00,000	
Less: Closing WIP	(1,92,000)	1,78,550
Factory Cost		6,37,750
Add: Administration Overheads		
Heat, Light & Power (1/10 x 65,000)	6,500	
Rates & Taxes(1/3 x 6,300)	2,100	
Depreciation on Buildings(1/10 x 4% x 2,00,000)	800	
Depreciation on office appliances (5% x 17,400)	870	
Office salaries	8,600	18,870

Cost of Production		6,56,620
Add: Opening Stock of Finished Goods	80,000	
Less: Closing Stock of Finished Goods	1,15,000	(35,000)
Cost of Goods Sold		6,21,620
Add: Selling & Distribution Overheads		
Heat, Light & Power (1/10 × 65,000)	6,500	
Depreciation on Buildings (1/10× 4% × 2,00,000)	800	
Sales Commission	33,600	
Sales Travelling	11,000	
Sales Promotion	22,500	
Distribution department salaries & wages	18,000	92,400
Cost of Sales		**7,14,020**

Condensed Profit and Loss Account for the year ended 31-12-2021

Particulars	₹	₹	Particulars	₹	₹
To Cost of Sales		7,14,020	By Sales	7,68,000	7,54,000
To Interest on Borrowings	2,000		Less: Sales Return	14,000	
Add: Accrued	2,000	4,000			
To Profit (Bal.fig)		35,980			
		7,54,000			7,54,000

Illustration 11

PR Ltd manufactures and sells a typical brand of Tiffin Boxes under its on brand name. The installed capacity of the plant is 1,20,000 units per year distributable evenly over each month of calendar year. The Cost Accountant of the company has informed the following cost structure of the product, which is as follows:

Raw Material ₹ 20 per unit.
Direct Labour ₹ 12 per unit.
Direct Expenses ₹ 2 per unit
Variable Overheads ₹ 16 per unit
Fixed Overheads ₹ 3,00,000.

Semi-variable Overheads are as follows:

₹ 7,500 per month upto 50% capacity and additional ₹ 2,500 per month for every additional 25% capacity utilization or part thereof.

The plant was operating at 50% capacity during the first seven months of the calendar year 2021, at 100% capacity in the remaining months of the year.

The selling price for the period from 1st January, 2021 to 31st July, 2021 was fixed at ₹ 69 per unit. The firm has been monitoring the profitability and revising the selling price to meet its annual profit target of ₹ 8,00,000. You

are required to suggest the selling price per unit for the period from 1st August, 2021to 31st December, 2021.

Prepare Cost Sheet clearly showing the total and per unit cost and also profit for the period.

1. From 1st January to 31st July, 2021.
2. From 1st August to 31st December, 2021.

Solution:

Cost Sheet

Capacity Utilisation Period	50% Capacity 1st January – 31st July		100% Capacity 1st August– 31st December	
Units	$\frac{1,20,000}{12} \times 7 \times 50\% = 35,000$		$\frac{1,20,000}{12} \times 5 \times 100\% = 50,000$	
Raw Material	20 × 35,000	7,00,000	20 × 50,000	10,00,000
Direct Labour	12 × 35,000	4,20,000	12 × 50,000	6,00,000
Direct Expenses	2 × 35,000	70,000	2 × 50,000	1,00,000
Variable Overheads	16 × 35,000	5,60,000	16 × 50,000	8,00,000
Fixed Overheads	$\frac{3,00,000}{12} \times 7$	1,75,000	$\frac{3,00,000}{12} \times 5$	1,25,000
Semi-Variable Overheads	7,500 × 7	52,500	12,500 × 5	62,500
Total Cost		19,77,500		26,87,500
Profit (WN 1)		4,37,500		3,62,500
Sales (WN 2)	69 × 35,000	24,15,000		30,50,000
Selling Price per unit (WN 2)		69	$\frac{30,50,000}{50,000}$	61
Cost per unit	$\frac{19,77,500}{35,000}$	56.50	$\frac{26,87,500}{50,000}$	53.75

Working Notes:

1. Selling Price for 1st January – 31st July = ₹69

   ∴ Sales = 69 × 35,000 = ₹24,15,000

   Profit for 1st January – 31st July = 24,15,000 – 19,77,500 = ₹4,37,500

2. Expected total profit for the year ₹8,00,000

   ∴ Profit to earn from 1st August – 31st December = 8,00,000 – 4,37,500 = ₹3,62,500

   ∴ Expected Sale from 1st August – 31st December = ₹30,50,000

   Expected Selling price per unit from 1st August – 31st December = (₹ 30,50,000)/50,000 = ₹ 61

Exercise

A. Theoretical Questions:

⊙ **Multiple Choice Questions:**

1. Prime cost is _____
   a. all costs incurred in manufacturing a product
   b. the total of direct costs
   c. the material cost of a product
   d. the cost of operating a department
2. A company employs three drivers to deliver goods to its customers. The salaries paid to these drivers are:
   a. a part of prime cost
   b. a direct production expense
   c. a production overheads
   d. a selling and distribution overheads
3. A company has to pay a Re 1 per unit royalty to the designer of a product which it manufactures and sells. The royalty charge would be classified in the company's accounts as a ____
   a. Direct expense
   b. Production overheads
   c. Administrative overheads
   d. Selling overheads
4. _____ is a method of dealing with overheads which involves spreading common costs over cost centers on the basis of benefit received.
   a. overheads absorption
   b. overheads apportionment
   c. overheads allocation
   d. overheads analysis
5. Which of the following classification is meant for distinction between direct cost and indirect cost?
   a. Function
   b. Element
   c. Variability
   d. Controllability
6. Which of the following is applicable for Cost Control?
   a. It is related with the future
   b. It is a corrective function
   c. It ends when the targets are achieved
   d. It challenges the standards set
7. _____ is anything for which a separate measurement of cost is required.
   a. Cost driver
   b. Cost centre
   c. Cost unit
   d. Cost object
8. Ticket counter in a Metro Station is an example of
   a. Profit centre
   b. Investment centre
   c. Cost centre

d. Revenue centre

9. Which of the following is an example of functional classification of cost?
   a. Direct labour cost
   b. Direct material cost
   c. Factory overheads
   d. Indirect material cost
10. Absorption costing is also referred as _____
   a. Historical costing
   b. Traditional costing
   c. Full costing
   d. All of the above terms
11. What is the primary objective of cost accounting?
   a. Maximize profits
   b. Record financial transactions
   c. Provide financial statements
   d. Facilitate cost control and decision-making
12. What does the term "opportunity cost" refer to in cost accounting?
   a. Actual monetary expenditure
   b. Cost of the next best alternative foregone
   c. Fixed manufacturing costs
   d. Variable selling expenses
13. In the context of cost elements, which category includes the cost of raw materials, direct labour, and direct expenses?
   a. Prime Cost
   b. Conversion Cost
   c. Overheads Cost
   d. Indirect Cost
14. What type of cost is incurred to support multiple cost objects but cannot be directly traced to any specific one?
   a. Direct Cost
   b. Indirect Cost
   c. Variable Cost
   d. Fixed Cost
15. What is the formula for calculating the cost of production in a manufacturing entity?
   a. Total Cost - Opening Stock
   b. Opening Stock + Purchases - Closing Stock
   c. Direct Materials + Direct Labour + Factory Overheads
   d. Selling Price - Gross Profit
16. Which of the following is deducted from the total cost to calculate the net profit?
   a. Selling Expenses
   b. Opening Stock
   c. Direct Materials
   d. Indirect Labour
17. If a business has an opportunity cost of ₹10,000 for choosing one project over another, what is the economic cost?
   a. ₹ 10,000

b. ₹ 0
c. The same as opportunity cost
d. Cannot be determined

18. If direct materials cost ₹ 20,000, direct labour is ₹ 15,000, and direct expenses are ₹ 5,000, what is the prime cost?
    a. ₹ 40,000
    b. ₹ 35,000
    c. ₹ 20,000
    d. ₹ 15,000
19. If fixed manufacturing costs are ₹ 50,000 and the number of units produced is 5,000, what is the fixed cost per unit?
    a. ₹10
    b. ₹ 5
    c. ₹ 50
    d. ₹ 0.1
20. If the direct materials consumed are ₹ 30,000, direct labour is ₹ 20,000, and factory overheads is ₹15,000, what is the total manufacturing cost?
    a. ₹ 50,000
    b. ₹ 65,000
    c. ₹ 30,000
    d. ₹ 20,000
21. If the gross profit is ₹ 40,000, selling expenses are ₹ 10,000, and administrative expenses are ₹ 5,000, what is the net profit?
    a. ₹ 40,000
    b. ₹ 35,000
    c. ₹ 25,000
    d. ₹ 15,000

Answer:

1	2	3	4	5	6	7	8	9	10	
b	d	a	b	b	c	d	d	c	d	
11	12	13	14	15	16	17	18	19	20	21
d	b	a	b	c	a	a	a	a	b	c

⊙ **Fill in the blanks**

1. Historical costs that cannot be recovered by any decision made now or in the future are called _____
2. Factory overheads costs are all manufacturing costs incurred in the factory except for _____ and _____ and _____
3. The sum of direct labour and factory overheads is termed _____
4. Product costs are _____ costs, that is, they are until they are sold; whereas period costs are matched immediately against the _____in the period in which it is earned.
5. Variable costs change _____in direct proportion to changes in output.
6. The net revenue forgone as a result of the rejection of an alternative is called an _____
7. Three inventory accounts are commonly used in manufacturing firms. They are raw materials, _____, and finished goods.
8. The beginning finished goods inventory plus the _____, minus the ending finished goods

inventory equals the cost of goods sold for a manufacturer.

9. The cost of direct materials used is the _____ plus _____minus the ending inventory of direct materials.
10. A variable cost is_____ per unit

Answer:

1	sunk costs	**2**	direct materials, direct labour, direct expenses
3	conversion cost	**4**	inventoriable, assets, revenue
5	in total	**6**	opportunity cost
7	work-in-process	**8**	cost of goods manufactured
9	beginning inventory of direct materials, purchases	**10**	constant

⊙ **Essay Type Questions**

1. Define the meaning of the term 'cost object' and provide three examples of cost objects.
2. Distinguish between a direct and indirect cost.
3. Describe how a given direct cost item can be both a direct and indirect cost.
4. Provide examples of each of the following:
   a. direct labour,
   b. indirect labour,
   c. direct materials,
   d. indirect materials, and
   e. indirect expenses.
5. Explain the meaning of the terms:
   a. prime cost,
   b. overheads, and
   c. cost allocations.
6. Distinguish between product costs and period costs.
7. Provide examples of decisions that require knowledge of how costs and revenues vary with different levels of activity.
8. Explain the meaning of each of the following terms:
   a. variable costs,
   b. fixed costs,
   c. semi-fixed costs, and
   d. semi-variable costs.

   Provide examples of costs for each of the four categories.
9. Distinguish between relevant (avoidable) and irrelevant (unavoidable) costs and provide examples of each type of cost.
10. Explain the meaning of the term 'sunk cost'.
11. Distinguish between incremental and marginal costs.
12. What is an opportunity cost? Give some examples.
13. Explain responsibility accounting.

Case Study[39]

The Northshire Hospital Trust operates two types of specialist X-ray scanning machines, XR1 and XR50. Details for the next period are estimated as follows:

Machine	XR1	XR50
Running hours	1100	2000
Variable running costs (excluding plates)	27500	64000
Fixed costs	20000	97500

A brain scan is normally carried out on machine type XR1: this task uses special X-ray plates costing ₹ 40 each and takes four hours of machine time. Because of the nature of the process, around 10 per cent of the scans produce blurred and therefore useless results.

Required:

a. Calculate the cost of a satisfactory brain scan on machine type XR1.

b. Brain scans can also be done on machine type XR50 and would take only 1.8 hours per scan with a reduced reject rate of 6 per cent. However, the cost of the X-ray plates would be ₹ 55 per scan.

Required: Advise which type should be used, assuming sufficient capacity is available on both types of machine.

Solution (Case Study)

a. Cost of a Satisfactory Brain Scan on Machine XR1:

$$\text{Variable Running Costs (XRI)} = 1100 \text{ running hours} \times \frac{₹20{,}000}{20{,}000 \text{ running hours}} = ₹\ 11{,}000$$

$$\text{Cost of X-ray Plates (XRI)} = (90\% \times \text{Number of Scans}) \times \text{Cost per Plate}$$

$$= (90\% \times \frac{1100 \text{ running hours}}{4 \text{ hours per scan}}) \times ₹\ 40 = ₹\ 9{,}900$$

Total Cost (XRI) = Variable Running Costs + Fixed Costs + Cost of X-ray Plates

= ₹ 11,000 + ₹ 27,500 + ₹ 9,900

= ₹ 48,400

b. Comparison and Recommendation:

For machine XR50, the cost of a brain scan includes variable running costs, fixed costs, and the cost of X-ray plates for a successful scan.

$$\text{Variable Running Costs (XR50)} = 2000 \text{ running hours} \times \frac{₹64{,}000}{20{,}000 \text{ running hours}} = ₹\ 64{,}000$$

Cost of X-ray Plates (XR50) = (94% × Number of Scans) × Cost per Plate

$$= (94\% \times \frac{2000 \text{ running hours}}{1.8 \text{ hours per scan}}) \times ₹\ 55 = ₹\ 57{,}900$$

Total Cost (XR50) = Variable Running Costs + Fixed Costs + Cost of X-ray Plates

= ₹ 64,000 + ₹ 97,500 + ₹ 57,900

= ₹ 2,19,400

Recommendation:

Based on the cost analysis, machine XRI is more cost-effective for performing brain scans. The total cost for a satisfactory brain scan on XRI is ₹ 48,400, while the total cost for XR50 is ₹ 2,19,400. Therefore, it is advisable to use machine XRI for brain scans, assuming sufficient capacity is available on both types of machines.

[39] Adopted from Management and Cost Accounting, Eighth Edition, by Colin Drury.