Accounting for Managers

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Abbreviations

A/c	-	Account Number
AICPA	-	American Institute of Certified Public Accountants
B.E.C	-	Break-even Chart
B.E.P	-	Break-even Point
C.I.M.A	-	Chartered Institute of Management Accountants
CVP	-	Cost Volume Profit
EBIT	-	Earnings before Interest, Taxes
EPS	-	Earnings Per Share
ICMA	-	International Capital Market Association
ICWAI	-	The Institute Of Cost & Works Account of India
NAA	-	National Association of Accountants
P&L	-	Profit and Loss
P/V	-	Profit Volume Ratio
PE Ratio	-	Price Earning Ratio
ROA	-	Return on Assets
ROE	-	Return on Equity

Chapter I

Introduction to Accounting

Aim

The aim of this chapter is to:

- introduce the principle of accounting
- elucidate the importance of accounting
- explain the methods of accounting

Objectives

The objectives of this chapter are to:

- explain the concept of accounting
- explicate the type of accounting
- elucidate the accounting conventions

Learning outcome

At the end of this chapter, you will be able to:

- understand the basis of accounting
- identify the terminologies used in accounting
- recognise the accounting equation

1.1 Introduction

In all types of activities (whether business or non-business) and in all kinds of organisations (whether business organisations like a manufacturing entity or trading entity or non-business organisations like schools, colleges, hospitals, libraries, clubs, temples, political parties) which require money and other economic resources, accounting is required to account for the usage of these resources. In other words, wherever money is involved, accounting is required to account for it. Accounting is rightly called the language of business. The basic function of any language is to serve as a means of communication. Accounting serves this function. It communicates the results of business operations to various parties who have some stake in the business, viz., the proprietor, creditors, investors, Government and other agencies. Though, accounting is generally associated with business, but it can also be used by persons like housewives, Government and other individuals also make use of accounting.

1.2 Accounting

Accounting, as an information system is the process of identifying, measuring and communicating the economic information of an organisation to its users who need the information for decision making. It identifies transactions and events of a specific entity. A transaction is an exchange in which each participant receives or sacrifices value (e.g., purchase of raw material). An event (whether internal or external) is a happening of consequence to an entity (e.g., use of raw material for production). An entity means an economic unit that performs economic activities.

American Institute of Certified Public Accountants (AICPA) defines accounting as "the art of recording, classifying and summarising in a significant manner and in terms of money, transactions and events, which are, in part at least, of a financial character and interpreting the results thereof".

1.2.1 Origin and Growth of Accounting

Accounting is as old as money itself. However, the act of accounting was not as developed as it is today because in the early stages of the civilisation, the numbers of transactions to be recorded were so small that each businessman was able to record all his transactions and check it all by himself. Accounting was practised in India twenty three centuries ago and it is clear from the book named "Arthashastra" written by Kautilya, during the reign of King Chandragupta Maurya. This book not only relates to politics and economics, but also explains the art of keeping accounts properly.

However, the modern system of accounting based on the principles of double entry system owes it origin to Luco Pacioli who first published the principles of Double Entry System in 1494 at Venice in Italy. Thus, the art of accounting has been practised for centuries, but it was only in the late thirties that the study of the subject 'accounting' had been taken up seriously.

1.2.2 Objective of Accounting

Objective of accounting may differ from business to business depending upon their specific requirements. However, the following are the general objectives of accounting.

- To keep a systematic record: It is very difficult to remember all the business transactions that take place. Accounting serves this purpose of 'record keeping' by promptly recording all the business transactions in the books of account.
- To ascertain the results of the operation: Accounting helps in ascertaining result, i.e., profit earned or loss suffered in business during a particular period. For this purpose, a business entity prepares either a 'Trading and Profit and Loss account' or an 'Income and Expenditure account' which shows the profit or loss of the business by matching the items of revenue and expenditure of the same period.
- To ascertain the financial position of the business: In addition to the profit, a businessman must know his financial position, i.e., availability of cash, position of assets and liabilities, etc. This helps the businessman to know his financial strength. Financial statements are health barometers of a business entity.
- To portray the liquidity position: Financial reporting should provide information about how an enterprise obtains and spends cash, about its borrowing and repayment techniques, about its capital transactions, cash dividends and other distributions of resources by the enterprise to owners and about other factors that may affect an enterprise's liquidity and solvency.

- To protect business properties: Accounting provides up to date information about the various assets that the firm possesses and the liabilities that the firm owes, so that nobody can claim a payment which is not due to him.
- To facilitate rational decision-making: Accounting records and financial statements provide financial information which helps the business in making rational decisions about the steps to be taken in respect to the various aspects of business.
- To satisfy the requirements of law: Entities such as companies, societies, public trusts are compulsorily required to maintain accounts as per the law governing their operations such as the Companies Act, Societies Act, and Public Trust Act, etc. Maintenance of accounts is also compulsory under the Sales Tax Act and Income Tax Act.

1.2.3 Importance of Accounting

Organisations often need a way to keep scores while conducting business operations. Accounting usually fits this need because it allows companies to create financial reports that can be compared with other companies or an industry standard. Business owners and managers use accounting to review the efficiency of operations. This information may help owners and managers to make business decisions and improve the company's profitability. The importance of accounting can be seen from various perspectives. Some of them are discussed below:

- Owners: The owners provide funds or capital for the organisation. They possess curiosity in knowing whether the business is being conducted on sound lines or not, and whether the capital is being employed properly or not. Owners, being businessmen, always keep an eye on the returns from the investment. Comparing the accounts of various years helps them to get good pieces of information.
- Management: The management of the business is greatly interested in knowing the position of the firm. The accounts are the basis as the management can study the merits and demerits of the business activity through it. Thus, the management is interested in financial accounting to find whether the business carried on is profitable or not. The financial accounting is the "eyes and ears of management and facilitates in drawing future course of action, and further expansion, etc."
- Creditors: Creditors are the persons who supply goods on credit, or bankers or lenders of money. It is normal that these groups are interested to know the financial stability of the firm before granting credit. The progress and prosperity of the firm, to which credits are extended, are largely watched by creditors from the point of view of security and further credit. Profit and Loss Account; and Balance Sheet of the firm are the nerve centres to know its soundness.
- Employees: Payment of bonus depends upon the size of profit earned by the firm. The more important point is that the workers expect regular income for bread and butter. The demand for rise in wages bonus, better working conditions, etc. depends upon the profitability of the firm and that in turn depends upon its financial position.
- Investors: The prospective investors, who want to invest their money in a firm, would wish to see the progress and prosperity of the firm, before investing their amount, by going through the financial statements of the firm. This is to safeguard their investment. This group is eager to go through the accounting as it enables them to know the safety of their investment.
- Government: The Government keeps a close watch on the firms which yield good amount of profits. The state and central Governments are interested in the financial statements to know the earnings for the purpose of taxation. It is very essential to compile national accounting.
- Consumers: This group is interested in getting the goods at a reduced price. Therefore, they wish to know the establishment of a proper accounting control, which in turn will reduce to the cost of production, and that in turn will lead to reduced price to be paid by the consumers. Researchers are also interested in accounting for interpretation.
- Research Scholars: Accounting information, which is a mirror of the financial performance of a business organisation, is of immense value to the research scholar who wants to make a study into the financial operations of a particular firm. To make a study into the financial operations of a particular firm, the research scholar needs detailed accounting information related to purchases, sales, expenses, cost of materials used, current assets, current liabilities, fixed assets, long-term liabilities and share-holders funds which is available in the accounting record maintained by the firm.

1.2.4 Functions of Accounting

The following are the main functions of Accounting:

- Record Keeping: The primary function of accounting relates to recording, classification and summarising of the financial transactions- journalisation, posting, and preparation of final statements. These facilitate to know operating results and financial positions. The purpose of this function is to report regularly to the interested parties by means of financial statements. Thus, accounting performs a historical function, i.e., attention on the past performances of the business; and this facilitates decision making programme for future activities.
- Management: Decision making programme is greatly assisted by accounting. The managerial function and decision making programmes, without accounting, may mislead. The day-to-day operations are compared with some pre-determined standard. The variations of actual operations with pre-determined standards and their analysis is possible only with the help of accounting.
- Legal Requirement: Auditing is compulsory in the case of registered firms. Auditing is not possible without accounting. Thus, accounting becomes compulsory to comply with the necessary legal requirements. Accounting is a base and with its help various returns, documents, statements, etc., are prepared.
- Language of Business: Accounting is the language of business. Various transactions are communicated through accounting. There are many parties-owners, creditors, government, employees, etc., who are interested in knowing the results of the firm and this can be communicated only through accounting. The accounting shows the real and true position of the firm/business.

1.2.5 Advantages of Accounting

Accounting plays an important and useful role, and as such it benefits management in many ways. Accounting involves recording transactions and compiling them in reports. The following are the advantages of accounting to a business:

- It helps in having a complete record of the business transactions.
- It gives information about the profit or loss made by the business at the year-end and its financial conditions. The basic function of accounting is to supply meaningful information about the financial activities of the business to the owners and the managers.
- It provides useful information for making economic decisions,
- It facilitates the comparative study and analysis of current year's profit, sales, expenses, etc., with those of the previous years.
- It supplies information which is useful in judging the management's ability to utilise the resources effectively in achieving the primary enterprise goals.
- It provides users with factual and interpretive information about transactions and other events which are useful for predicting, comparing and evaluating the enterprise's earning power.
- It helps in complying with certain legal formalities like filing of income-tax and sales-tax returns. If the accounts are properly maintained, the assessment of taxes is greatly facilitated.

1.2.6 Limitations of Accounting

Accountancy assists users of financial statements to make better financial decisions. It is important however to realise the limitations of accounting and financial reporting when forming those decisions.

- Accounting is historical in nature: It does not reflect the current financial position or worth of a business.
- Transactions of non-monetary nature are not included in accounting.
- As accounting is limited to monetary transactions only; it excludes qualitative elements like management, reputation, employee morale, labour strike, etc.
- Facts recorded in financial statements are greatly influenced by accounting conventions and personal judgements of the Accountant or Management. Valuation of inventory, provision for doubtful debts and assumption about useful life of an asset May therefore, differ from one business house to another.
- Accounting principles are not static or unchanging-alternative accounting procedures are often equally acceptable. Therefore, accounting statements do not always present comparable data.

- Cost concept is found in accounting. Price changes are not considered.
- Money value is bound to change often from time to time. This is a strong limitation of accounting.
- Accounting statements do not show the impact of inflation.
- The accounting statements do not reflect the increase in net asset values that are not considered realised.

1.3 Methods of Accounting

Business transactions are recorded in two different ways.

Single Entry

It is incomplete system of recording business transactions. The business organisation maintains only cash book and personal accounts of debtors and creditors. So, the complete recording of transactions cannot be made and trail balance cannot be prepared.

Double Entry

In this system, every business transaction has a twofold effect which includes benefits giving and benefit receiving aspects. The recording is made on the basis of both these aspects. Double Entry is an accounting system that records the effects of transactions and other events in atleast two accounts with equal debits and credits.

The various steps involved in double entry system are as follows:

- Preparation of Journal: Journal is the book of original entry. The everyday activities of the business result in business transactions and business transactions produce documents. Thus, the effect of all transactions done for the first time is recorded in the journal. The information from the documents is recorded into journals
- Preparation of Ledger: Ledger is the collection of all accounts used by the business. The data is taken from the journals and entered into ledger books. The grouping of accounts is performed in the ledger.
- Trial Balance preparation: It is a summary of ledger balances prepared in the form of a list.
- Preparation of Final Account: At the end of the accounting period, to know the achievements of the organisation and its financial state of affairs, the final accounts are prepared.

Various advantages of double entry system are:

- Scientific system: This system is the only scientific system of recording business transactions in a set of accounting records. It helps to attain the objectives of accounting.
- Complete record of transactions: This system maintains a complete record of all business transactions.
- A check on the accuracy of accounts: By using this system the accuracy of accounting book can be established through the device called a Trail balance.
- Ascertainment of profit or loss: The profit earned or loss suffered during a period can be ascertained together with details by the preparation of Profit and Loss Account.
- Knowledge of the financial position of the business: The financial position of the firm can be ascertained at the end of each period, through the preparation of balance sheet.
- Full details for purposes of control: This system permits accounts to be prepared or kept in as much detail as necessary and, therefore, affords significant information for purposes of control, etc.
- Comparative study: Results of one year may be compared with those of the precious year and reasons for the change may be ascertained.
- Helps management in decision making: The management may also obtain good information for its work, especially for making decisions.
- No scope for fraud: The firm is saved from frauds and misappropriations since full information about all assets and liabilities will be available.

Meaning of Debit and Credit

The term 'debit' is supposed to have derived from 'debit' and the term 'credit' from 'creditable'. For convenience 'Dr' is used for debit and 'Cr' is used for credit. Recording of transactions require a thorough understanding of the rules of debit and credit relating to accounts. Both debit and credit may represent either increase or decrease, depending upon the nature of account.

1.4 Types of Accounting

The object of book-keeping is to keep a complete record of all the transactions that takes place in the business. To achieve this object, business transactions have been classified into three categories:

- Transactions relating to persons are known as 'Personal Accounts'
- Transactions relating to properties and assets are known as 'Real Accounts'
- Transactions relating to incomes and expenses are known as 'Nominal Accounts'

1.4.1 Personal Accounts

Accounts recording transactions with a person or group of persons are known as personal accounts. These accounts are necessary, in particular, to record credit transactions. Personal accounts are of the following types:

- Natural persons: An account recording transactions with an individual is termed as a natural persons' personal account. For e.g., Kamal's account, Mala's account, Sharma's accounts. Both males and females are included in it.
- Artificial or legal persons: An account recording financial transactions with an artificial person created by law or otherwise is termed as an artificial persons' personal account. For e.g., Firms' accounts, limited companies' accounts, educational institutions' accounts, Co-operative society's account.
- Groups/Representative Personal Accounts: An account indirectly representing a person or persons is known as representative personal account. When accounts are of a similar nature and their number is large, it is better to group them under one head and open a representative personal account. For e.g., prepaid insurance, outstanding salaries, rent, wages, etc.
- When a person starts a business, he is known as a proprietor. This proprietor is represented by a capital account for what he has invested in business and by drawings accounts for what he withdraws from business. So, capital accounts and drawings account are, also, personal accounts.
- The rule for personal accounts is: Debit, the receiver; Credit, the giver.

1.4.2 Real Accounts

Accounts relating to properties or assets are known as 'Real Accounts'. A separate account is maintained for each asset e.g., Cash Machinery, Building, etc. Real accounts can be further classified into tangible and intangible.

- Tangible Real Accounts: These accounts represent assets and properties which can be seen, touched, felt, measured, purchased and sold. For e.g., Machinery account, Cash account, Furniture account, stock account, etc.
- Intangible Real Accounts: These accounts represent assets and properties which cannot be seen, touched or felt, but they can be measured in terms of money. For e.g., Goodwill accounts, Patents account, Trademarks account, Copyrights account, etc.
- The rule for Real accounts is: Debit, what comes in; Credit, what goes out.

1.4.3 Nominal Accounts

Accounts relating to income, revenue, gain, expenses and losses are termed as nominal accounts. These accounts are also known as fictitious accounts as they do not represent any tangible asset. A separate account is maintained for each head or expense or loss and gain or income. Wages account, Rent account, Commission account, Interest received account are some examples of nominal account. The rule for Nominal accounts is: Debit, all expenses and losses; Credit, all incomes and gains.

1.5 Branches of Accounting

The changing business scenario over the centuries gave rise to specialised branches of accounting which could cater to the changing requirements. The branches of accounting are as follows:

Financial Accounting

The accounting system concerned only with the financial state of affairs and results of financial operations is known as Financial Accounting. It is the original form of accounting. It is mainly concerned with the preparation of financial statements for the use of creditors, debenture holders, investors and financial institutions. The financial statements i.e., the profit and loss account and the balance sheet, show them the manner in which operations of the business have been conducted during a specified period.

Cost Accounting

Keeping in view the limitations of financial accounting in respect to the information relating to the cost of individual products, cost accounting was developed. It is that branch of accounting which is concerned with the accumulation and assignment of historical costs to units of product and department, primarily for the purpose of valuation of stock and measurement of profits. Cost accounting seeks to ascertain the cost of unit produced and sold or the services rendered by the business unit with a view to exercise control over these costs so as to assess profitability and efficiency of the enterprise. It generally relates to the future and involves an estimation of future costs to be incurred. The process of cost accounting is based on the data provided by the financial accounting.

Management Accounting

It is accounting for the management, i.e., accounting which provides necessary information to the management for discharging its functions. According to the Anglo-American Council on productivity, "Management accounting is the presentation of accounting information in such a way so as to assist management in the creation of policy and the day-to-day operation of an undertaking." It covers all the arrangements and combinations or adjustments of the orthodox information to provide the Chief Executive with the information from which he can control the business, e.g., Information about funds, costs, profits, etc. Management accounting is not only confined to the area of cost accounting, but also covers other areas such as capital expenditure decisions, capital structure decisions, and dividend decisions.

1.6 Principles of Accounting

The word 'Principle' has been viewed differently by different schools of thought. The American Institute of Certified Public Accountants (AICPA) has viewed the word 'principle' as a "general law of rule adopted or professed as a guide to action; a settled ground or basis of conduct of practice."

Accounting principles refer, to certain rules, procedures and conventions which represent a consensus view by those indulging in good accounting practices and procedures. Canadian Institute of Chartered Accountants defined accounting principle as "the body of doctrines commonly associated with the theory and procedure of accounting, serving as an explanation of current practices as a guide for the selection of conventions or procedures, where alternatives exist. Rules governing the formation of accounting axioms and the principles derived from them have arisen from common experiences, historical precedent, statements by individuals and professional bodies and regulations of Governmental agencies".

To be more reliable, accounting statements are prepared in conformity with these principles. If not, chaotic conditions would result. However, in reality as all the businesses are not alike, each one has its own method of accounting. Yet, to be more acceptable, the accounting principles should satisfy the following three basic qualities, viz., relevance, objectivity and feasibility. The accounting principle is considered to be relevant and useful to the extent that it increases the utility of the records to its readers. It is said to be objective to the extent that it is supported by facts and free from personal bias. It is considered to be feasible to the extent that it is practicable with the least complication or cost. Though accounting principles are denoted by various terms such as concepts, conventions, doctrines, tenets, assumptions, axioms, postulates etc., it can be classified into two groups, viz., accounting concepts and accounting conventions.

1.7 Accounting Concepts

The term 'concept' is used to denote accounting postulates, i.e., basic assumptions or conditions upon the edifice of which the accounting super-structure is based. The following are the common accounting concepts adopted by many business concerns.

- Business Entity Concept: A business unit is an organisation of persons established to accomplish an economic goal. Business entity concept implies that the business unit is separate and distinct from the persons who provide the required capital to it. This concept can be expressed through an accounting equation, viz., Assets = Liabilities + Capital. The equation clearly shows that the business itself owns the assets and in turn owes to various claimants. It is worth mentioning here that the business entity concept as applied in accounting for sole trading units is different from the legal concept. The expenses, income, assets and liabilities which are not related to the sole proprietorship business are excluded from accounting. However, a sole proprietor is personally liable and required to utilise non-business assets or private assets to settle the business creditors as per law. Thus, in the case of sole proprietorship, business and non-business assets and liabilities are treated alike in the eyes of law. In the case of a partnership firm, for the payment of the business liabilities the business assets are used first and if any surplus remains thereafter, it can be used for paying off the private liabilities of each partner. Similarly, the private assets are used first to pay off the private liabilities of partners and if any surplus remains, it is treated as part of the firm's property and is used for paying the firm's liabilities. In the case of a company, its existence does not depend on the life span of any shareholder.
- Money Measurement Concept: In accounting, all the events and transactions are recorded in terms of money. Money is considered as a common denominator, by means of which various facts, events and transactions in a business can be expressed in terms of numbers. In other words, facts, events and transactions which cannot be expressed in monetary terms are not recorded in accounting. Hence, the accounting does not give a complete picture of all the transactions of a business unit. This concept does not also take care of the effects of inflation because it assumes a stable value for measuring.
- Going Concern Concept: Under this concept, the transactions are recorded assuming that the business will exist for a longer period of time, i.e., a business unit is considered to be a going concern and not a liquidated one. Keeping this in view, the suppliers and other companies enter into business transactions with the business unit. This assumption supports the concept of valuing the assets at historical cost or replacement cost. This concept also supports the treatment of prepaid expenses as assets, although they may be practically unsaleable.
- Dual Aspect Concept: According to this basic concept of accounting, every transaction has a two-fold aspect, i.e., giving certain benefits and receiving certain benefits. The basic principle of double entry system is that every debit has a corresponding and equal amount of credit. This is the underlying assumption of this concept. Therefore, the accounting equation is: Assets = Capital + Liabilities or Capital = Assets – Liabilities. To further clarify this concept, at any point of time the total assets of the business units are equal to its total liabilities. Liabilities here relate both to the outsiders and the owners. Liabilities to the owners are considered as capital.
- Periodicity Concept: Under this concept, the life of the business is segmented into different periods and accordingly the result of each period is ascertained. Though the business is assumed to be continuing in future (as per going concern concept), the measurement of income and studying the financial position of the business for a shorter and definite period will help in taking corrective steps at the appropriate time. Each segmented period is called "accounting period" and it is normally a year. The businessman has to analyse and evaluate the results ascertained periodically. At the end of an accounting period, an Income Statement is prepared to ascertain the profit or loss made during that accounting period and Balance Sheet is prepared which depicts the financial position of the business as on the last day of that period. During the course of preparation of these statements capital revenue items are to be necessarily distinguished.
- Historical Cost Concept: According to this concept, the transactions are recorded in the books of account with the respective amounts involved. For example, if an asset is purchased, it is entered in the accounting record at the price paid to acquire the same and that cost is considered to be the base for all future accounting. It means that the asset is recorded at cost at the time of purchase, but it may be methodically reduced in its value by way of charging depreciation. However, in the light of inflationary conditions, the application of this concept is considered highly irrelevant for judging the financial position of the business.

- Matching Concept: The essence of the matching concept lies in the view that all costs which are associated to a particular period should be compared with the revenues associated to the same period to obtain the net income of the business. Under this concept, the accounting period concept is relevant and it is this concept (matching concept) which necessitated the provisions of different adjustments for recording outstanding expenses, prepaid expenses, outstanding incomes, incomes received in advance, etc., during the course of preparing the financial statements at the end of the accounting period.
- Realisation Concept: This concept assumes or recognises revenue when a sale is made. Sale is considered to be complete when the ownership and property are transferred from the seller to the buyer and the consideration is paid in full. However, there are two exceptions to this concept.
  - Hire a purchase system, where the ownership is transferred to the buyer when the last instalment is paid
  - Contract accounts, in which the contractor is liable to pay only when the whole contract is completed, the profit is calculated on the basis of work certified each year.
- Accrual Concept: According to this concept, the revenue is recognised on its realisation and not on its actual receipt. Similarly the costs are recognised when they are incurred and not when the payment is made. This assumption makes it necessary to have certain adjustments in the preparation of income statement regarding revenues and costs. However under the cash accounting system, the revenues and costs are recognised only when they are actually received or paid. Hence, the combination of both cash and accrual system is preferable to get rid of the limitations of each system.
- Objective Evidence Concept: This concept ensures that all accounting must be based on objective evidence, i.e., every transaction recorded in the books of account must have a verifiable document in support of its existence. It is only then that the transactions can be verified by the auditors and declared as true or otherwise. The verifiable evidence for the transactions should be free from personal bias, i.e., it should be objective in nature and not subjective. However, in reality the subjectivity cannot be avoided in the aspects like provision for bad and doubtful debts, provision for depreciation, valuation of inventory, etc., and the accountants are required to disclose the regulations followed.

1.8 Accounting Conventions

The following conventions are to be followed to have a clear and meaningful information and data in accounting:

- Consistency: The convention of consistency refers to the state of accounting rules, concepts, principles, practices and conventions being observed and applied constantly, i.e., from one year to another and there should not be any change. If consistency exists, then the results and performance of one period can be compared easily and meaningfully with the other. It also prevents personal bias as the persons involved have to follow the consistent rules, principles, concepts and conventions. This convention, however, does not completely ignore changes. It admits changes, wherever it is indispensable and adds to the improved and modern techniques of accounting.
- Disclosure: The convention of disclosure stresses on the importance of providing accurate, full and reliable information and data in the financial statements which is of material interest to the users and readers of such statements. This convention is given due legal emphasis by the Companies Act, 1956 by prescribing formats for the preparation of financial statements. However, the term disclosure does not state all information that one desires to get should be included in accounting statements. It is enough if sufficient information, which is of material interest to the users, is included.
- Conservatism: In the prevailing uncertainties of the present day, the convention of conservatism has its own importance. This convention follows the policy of caution or playing safe. It takes into account all the possible losses, but not the possible profits or gains. A view opposed to this convention is that there is a possibility of creation of secret reserves when conservatism is excessively applied, which is directly opposed to the convention of full disclosure. Thus, the convention of conservatism should be applied very cautiously.

1.9 Bases of Accounting

There are three bases of accounting in common usage. Any one of the following bases may be used to finalise accounts.

- Cash basis
- Accrual or Mercantile basis
- Mixed or Hybrid basis

Accounting on cash basis

Under cash basis accounting, entries are recorded only when cash is received or paid. No entry is passed when a payment or receipt becomes due. Income under cash basis of accounting, therefore, represents excess of receipts over payments during an accounting period. Government system of accounting is mostly on cash basis. Certain professional people record their income on cash basis, but while the recording expenses they take into account includes the outstanding expenses also. In such a case, the financial statements prepared by them for determination of their income are termed as Receipts and Expenditure Account.

Accrual basis of accounting or mercantile system

Under accrual basis of accounting, accounting entries are made on the basis of amounts due for payment or receipt. Incomes are credited to the period in which they are earned irrespective of whether cash is received or not. Similarly, expenses and losses are detailed to the period in which, they are incurred, whether cash is paid or not. The profit or loss of any accounting period is the difference between incomes earned and expenses incurred, irrespective of cash payment or receipt. All outstanding expenses and pre-paid expenses, accrued incomes and incomes received in advance are adjusted while finalising the accounts. Under the Companies Act of India 1956, all companies are required to maintain the books of accounts according to accrual basis of accounting.

Mixed or hybrid basis of accounting

When certain items of revenue or expenditure are recorded in the books of account on cash basis and certain items on mercantile basis, the basis of accounting so employed is called the 'hybrid basis of accounting'. For example, a company may follow mercantile system of accounting in respect of its export business. However, government subsidies and duty drawbacks on exports to be received from government are recorded only when they are actually received, i.e., on cash basis. Such a method could be adopted because of uncertainty with respect of quantum, amount and time of receipt of such incentives and drawbacks. Such a method of accounting followed by the company is called the hybrid basis of accounting. In practice, the profit or loss shown under this basis will not be realistic. Conservative people, who prefer recognising income when it is received, but are cautious to provide for all expenses whether paid or not, prefer this system. It is not widely practised due to its inconsistency.

1.10 Accounting Terminology

It is necessary to understand some of the basic accounting terms which are used daily in the business world. These terms are called accounting terminology.

Transaction

An event, the recognition of which gives rise to an entry, in accounting records is called transaction. It is an event which brings about change in the balance sheet equation. It, therefore, changes the value of assets and equity. In a simple statement, transaction means the exchange of money or currencies from one account to another account Events like purchase and sale of goods, receipt and payment of cash for services or on personal accounts, loss or profit in dealings, etc., are called transactions. Cash transaction is one, where cash receipt or payment is involved in the exchange. Credit transaction, on the other hand, will not have 'cash' either received or paid, for something given or received respectively, but it gives rise to the debtor and creditor relationship. Non-cash transaction is one where the question of receipt or payment of cash does not arise at all, e.g., depreciation, return of goods, etc.

Debtor
A person who owes money to the firm on account of credit sales of goods is called a debtor. If the debt is in the form of a loan from a financial institution, the debtor is referred to as a borrower. If the debt is in the form of securities, such as bonds, the debtor is referred to as an issuer. For example, when goods are sold to a person on credit that person pays the price in future, he is called a debtor because he owes the amount to the firm.

Creditor
A person to whom the firm owes money is called creditor. For example, Madan is a creditor of the firm when goods are purchased on credit from him

Capital
It means the amount (in terms of money or assets having money value) which the proprietor has invested in the firm or can claim from the firm. It is also known as owner's equity or net worth. Owner's equity means owner's claim against the assets. It will always be equal to assets less liabilities, say:
Capital = Assets - Liabilities.

Liability
It means the amount which the firm owes to outsiders, except the proprietors. In the words of Finny and Miller, "Liabilities are debts; they are amounts owed to creditors; thus the claims of those who are not owners are called liabilities". In simple terms, debts repayable to outsiders by the business are known as liabilities.

Asset
Any physical thing or right that is owned and has a money value is an asset. In other words, an asset is that expenditure which results in acquiring some property or benefits of a lasting nature.

Goods
It is a general term used for the articles in which the business deals; that is, only those articles which are bought for resale for profit are known as Goods.

Revenue
It means the amount which, as a result of operations, is added to the capital. It is defined as the inflow of assets which result in an increase in the owner's equity. It includes all incomes like sales receipts, interest, commission, brokerage etc. However, receipts of capital nature like additional capital, sale of assets, etc., are not a part of revenue.

Expense
The terms 'expense' refers to the amount incurred in the process of earning revenue. If the benefit of the expenditure is limited to one year, it is treated as an expense (also known as revenue expenditure) such as payment of salaries and rent.

Expenditure
Expenditure takes place when an asset or service is acquired. The purchase of goods is expenditure, whereas cost of goods sold is an expense. Similarly, if an asset is acquired during the year, it is expenditure; if it is consumed during the same year, it is also an expense of the year.

Purchases
Buying of goods by the trader for selling them to his customers is known as purchases. As the trade is buying and selling of commodities, purchase is the main function of a trade. Here, the trader gets possession of the goods which are not for personal use, but for resale. Purchases can be of two types, i.e., cash purchases and credit purchases. If cash is paid immediately for the purchase, it is called cash purchases. If the payment is postponed, it is called credit purchases.

Sales
When the goods purchased are sold through various outlets, it is known as sales. Here, the possession and the ownership right over the goods are transferred to the buyer. It is known as 'Business Turnover' or sales proceeds. It can be of two types, viz., cash sales and credit sales. If the sale is for immediate cash payment, it is called cash sales. If payment for sales is postponed, it is called credit sales.

Stock
The goods which are purchased are for selling. However, if the goods are not sold out completely, a part of the total goods purchased is kept with the trader until it is sold out, this is called stock. If there is stock at the end of the accounting year, it is said to be a closing stock. This closing stock at the year end will be the opening stock for the subsequent year.

Drawings
A drawing is the amount of money or the value of goods which the proprietor takes for his domestic or personal use. It is usually subtracted from capital.

Losses
Loss really means something against which the firm receives no benefit. It represents money given up without any return. It may be noted that expense leads to revenue, but losses do not.

Account
It is a statement of the various dealings which occurs between a customer and the firm. It can also be expressed as a clear and concise record of the transaction relating to a person or a firm or a property (or assets) or a liability or an expense or an income.

Invoice
While making a sale, the seller prepares a statement giving the particulars such as the quantity, price per unit, the total amount payable, any deductions made and shows the net amount payable by the buyer. Such a statement is called an invoice.

Voucher
A voucher is a written document in support of a transaction. It is a proof that a particular transaction has taken place for the value stated in the voucher. Voucher is necessary to audit the accounts.

Proprietor
The person who makes the investment and bears all the risks connected with the business is known as proprietor.

Discount
When the customers are allowed any type of deduction in the prices of goods by the businessman, it is called discount. When some discount is allowed in prices of goods on the basis of sales of the items, that is termed as trade discount, but when debtors are allowed some discount in prices of the goods for quick payment, that is termed as cash discount.

Solvent
A person who has assets with realisable values which exceeds his liabilities is called a solvent.

Insolvent
A person whose liabilities are more than the realisable values of his assets is called an insolvent.

1.11 Accounting Equation

As indicated earlier, every business transaction has two aspects. One aspect is debited other aspect is credited. Both the aspects have to be appropriately recorded in accounts. American Accountants have derived the rules of debit and credit through a 'novel' medium, i.e., accounting equation. The equation is as follows:

Assets = Equities

The equation is based on the principle that accounting deals with property and rights to property and the sum of the properties owned is equal to the sum of the rights to the properties. The properties owned by a business are called assets and the rights to properties are known as liabilities or equities of the business. Equities can be subdivided into equity of the owners which is known as capital and equity of creditors who represent the debts of the business know as liabilities. These equities may also be called internal equity and external equity. Internal equity represents the owner's equity in the assets and external represents the outsider's interest in the asset. Based on the bifurcation of equity, the accounting equation can be restated as follows:

Assets = Liabilities + Capital
(Or)
Capital = Assets – Liabilities
(Or)
Liabilities = Assets – Capital.

The equation is fundamental in the sense that it gives a foundation to the double entry book-keeping system. This equation holds good for all transaction and events and at all periods of time since every transaction and events has two aspects.

Summary

- The basic function of any language is to serve as a means of communication.
- An entity means an economic unit that performs economic activities.
- Accounting, as an information system is the process of identifying, measuring and communicating the economic information of an organisation to its users who need the information for decision making.
- A transaction is an exchange in which each participant receives or sacrifices value.
- Accounting helps in ascertaining result i.e., profit earned or loss suffered in business during a particular period.
- Creditors are the persons who supply goods on credit, or bankers or lenders of money.
- The Government keeps a close watch on the firms which yield good amount of profits.
- The primary function of accounting relates to recording, classification and summarising of the financial transactions- journalisation, posting, and preparation of the final statements.
- Accounting is a base and with its help various returns, documents, statements, etc., are prepared.
- Accounting is limited to monetary transactions only.
- Accounting principles are not static or unchanging-alternative accounting procedures are often equally acceptable.
- Double Entry is an accounting system that records the effects of transactions and other events in atleast two accounts with equal debits and credits.
- Ledger is the collection of all accounts used by the business.
- Transactions relating to properties and assets are known as 'Real Accounts'
- Accounts recording transactions with a person or group of persons are known as personal accounts.
- An account recording financial transactions with an artificial person created by law or otherwise is termed as an artificial person.
- An account indirectly representing a person or persons is known as representative personal account.
- Accounts relating to income, revenue, gain, expenses and losses are termed as nominal accounts.
- The accounting system concerned only with the financial state of affairs and results of financial operations is known as Financial Accounting.
- A business unit is an organisation of persons established to accomplish an economic goal.
- The essence of the matching concept lies in the view that all costs which are associated to a particular period should be compared with the revenues associated to the same period to obtain the net income of the business.
- The convention of consistency refers to the state of accounting rules, concepts, principles, practices and conventions being observed and applied constantly.
- The convention of disclosure stresses on the importance of providing accurate, full and reliable information and data in the financial statements which is of material interest to the users and readers of such statements.
- When certain items of revenue or expenditure are recorded in the books of account on cash basis and certain items on mercantile basis, the basis of accounting so employed is called 'hybrid basis of accounting'.
- Cash transaction is one, where cash receipt or payment is involved in the exchange.
- The properties owned by a business are called assets and the rights to properties are known as liabilities or equities of the business.

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Self Assessment

1. _____ identifies transactions and events of a specific entity.
   a. Communication
   b. Accounting
   c. Event
   d. Trading

2. Which of the following is not one of the objectives of accounting?
   a. To keeping systematic record
   b. To ascertain the results of the operation
   c. To ascertain the financial position of the business
   d. To interest the management

3. Which of the following is one of the disadvantages of accounting?
   a. It helps in having complete record of business transactions.
   b. It gives information about the profit or loss made by the business.
   c. It does not reflect the current financial position.
   d. It provides useful information form making economic decisions.

4. _____ is an incomplete system of recording business transactions.
   a. Money value
   b. Accounting statement
   c. Double entry
   d. Single entry

5. Which of the following is not one of the steps involved in double entry?
   a. Preparation of Journal
   b. Preparation of credit account
   c. Preparation of Final Account
   d. Preparation of Ledger

6. Which of the following is not one of the advantages of double entry system?
   a. Complete record of transactions
   b. A check on the accuracy of accounts
   c. Comparative study is not possible
   d. Helps management in decision making

7. Which of the following is not one of the types of accounts?
   a. Personal accounts
   b. Commercial accounts
   c. Real accounts
   d. Nominal accounts

8. Match the following

1. Financial Accounting	A. Concerned with the accumulation and assignment of historical costs to units of product and department.
2. Cost Accounting	B. The accounting system concerned only with the financial state of affairs and financial results of operations.
3. Management Accounting	C. Accounts relating to income, revenue, gain expenses and losses.
4. Nominal Accounts	D. The presentation of accounting information in such a way so as to assist management in the creation of policy and the day-to-day operation of an undertaking.

a. A- 3; B- 1; C-2; D- 4
b. A- 2; B- 1; C-4; D- 3
c. A- 1; B- 3; C-4; D- 2
d. A- 4; B- 2; C-1; D- 3

9. _____ concept implies that the business unit is separate and distinct from the persons who provide the required capital to it.
a. Money measurement
b. Going concern
c. Dual aspect concept
d. Business entity

10. A person to whom the firm owes money is called _____.
a. creditor
b. debtor
c. purchaser
d. accountant

Chapter II

Journal, Ledger and Subsidiary Books

Aim

The aim of this chapter is to:

- introduce journal and ledger
- elucidate the advantages of journal
- explain the concept of subsidiary books

Objectives

The objectives of this chapter are to:

- explain the sub division of ledger
- explicate the steps in posting from journal to ledger
- elucidate the kind of subsidiary books

Learning outcome

At the end of this chapter, you will be able to:

- identify the types of cash books
- recognise the documents for subsidiary books
- distinguish between journal and ledger

2.1 Introduction

When the business transactions take place, the first step is to record the same in the books of original entry or subsidiary books or books of prime or journal. Thus, journal is a simple book of accounts in which all the business transactions are originally recorded in chronological order and from which they are posted to the ledger accounts at any convenient time. Journalising refers to the act of recording each transaction in the journal and the form in which it is recorded, is known as a journal entry.

2.2 Advantages of Journal

The following are the inherent advantages of using journal, though the transactions can also be directly recorded in the respective ledger accounts;

- As all the transactions are entered in the journal chronologically, a date wise record can easily be maintained
- All the necessary information and the required explanations regarding all transactions can be obtained from the journal
- Errors can be easily located and prevented by the use of journal or book of prime entry

The specimen journal is as follows:

Date	Particular	L.F.	Debit Rs.	Credit Rs.
1	2	3	4	5
			-	-

Table 2.1 Specimen journal

As shown in the above table, the journal has five columns:

- Date: In each page of the journal at the top of the date column, the year is written and in the next line, month and date of the first entry are written. The year and month need not be repeated until a new page is begun or the month or the year changes. Thus, in this column, only the date on which the transaction takes place is written.
- Particulars: In this column, the details regarding account titles and description are recorded. The name of the account to be debited is entered first at the extreme left of the particulars column next to the date and the abbreviation 'Dr.' is written at the right extreme of the same column in the same line. The name of the account to be credited is entered in the next line preceded by the word "To" leaving a few spaces away from the extreme left of the particulars column. In the next line immediately to the account credited, a short about the transaction is given which is known as "Narration". "Narration" may include particulars required to identify and understand the transaction and should be adequate enough to explain the transaction.

  It usually starts with the word "Being" which means what it is and is written within parentheses. The use of the word "Being" is completely dispensed with, in modern parlance. To indicate the completion of the entry for a transaction, a line is usually drawn all through the particulars column.
- Ledger Folio: This column is meant to record the reference of the main book, i.e., ledger and is not filled in when the transactions are recorded in the journal. The page number of the ledger in which the accounts appears is indicated in this column, while the debits and credits are posted on the ledger accounts.
- Amount (Debit): The amount to be debited along with its unit of measurement at the top of this column on each page is written against the account debited.
- Amount (Credit): The amount to be credited along with its unit of measurement at the top of this column on each page is written against the account credited.

2.3 Sub-Division of Journal

When innumerable number of transactions takes place, the journal, as the sole book of the original entry becomes inadequate. Thus, the number and the type of journals required are determined by the nature of operations and the volume of transactions in a particular business. There are many types of journals and the following are the important ones:

Cash Receipts Journals
It records all the funds coming to the business in the form of either cash or cheque.

Receipt Date	Receivable Form	Receive Number	Discount allowed	Account Receivable	Cash sales	Cash Payable	Amount received

Table 2.2 Cash receipt journals

Cash Payment journals
It records all cash and cheque paid.

Cheque Date	Paid to	Cheque Number	Discount received	Account payable	Cash purchases	Cash received	Cheque Amount

Table 2.3 Cash payment journal

Sales Journals
It records all sales trading stocks like, inventories on credit.

Date of invoice	Sold to	Invoice Number	Sales amount	Total Value of Invoice

Table 2.4 Sales journals

Sales Return and Allowances Journal
It records the returns of credit sales

Date of invoice	Returned to	Credit Note Number	Amount	Total Value of Invoice

Table 2.5 Sales return and allowance journals

Purchase Journal
It records all the purchases of inventory on credit.

Date of Invoice	Purchased From	Invoice Number	Purchases value of goods	Total Value	Withholding Tax Payable

Table 2.6 Purchase journal

Purchase Return and Allowance Journal
It records the return of credit purchases or allowances that were previously purchased on credit.

Date of Invoice	Returned Form	Credit Note Number	Value of goods Returned	Total Value	Withholding Tax Payable

Table 2.7 Purchase return and allowance journal

General Journal
It records all transactions that are not recorded in any of the specialised journals.

Date of Transaction	Particulars	Amount to be debited	Amount to be credited	Balance

Table 2.8 General journal

Illustration:
During January 2010, Ahuja Motors transacted the following business:

Date	Particulars	Amount (Rs)
1	Commenced business with cash	50000
2	Purchased goods on credit from Gopal	30000
3	Purchased goods for cash	5000
4	Paid shyam in advanced for goods ordered	3000
5	Received cash from Mohan as advanced for goods ordered by him	5000
6	Purchased furniture for office use in cash	3000
7	Paid wages	400
8	Received commission (in cash)	300
9	Goods returned to Gopal	500
10	Goods sold to Karim	15000
11	Paid for postage and telegram	300
12	Goods returned by Karim	500
19	Sold goods for cash	1000
21	Drew cash for personal use	1500
23	Bought goods for cash	2000
31	Paid rent	250

Table 2.9 Ahuja motors transactions

Solution

Journal entries in the book of Ahuja Motors for the month of January, 2010

Date	Particulars	Ledger File	Amount (DR)	Amount (CR)
1	Cash a/c Dr To Capital a/c (being the cash brought into business as capital) (Concept: cash is the Real Account , Debit what comes in. owners capital is a Personal Account , credit the giver)		50000	50000
2	Purchase a/c Dr To Gopal's a/c (being the goods purchased on credit from Gopal) (Concept: Goods is the Real Account, Debit what comes in. Gopal's Account is the Personal Account, Credit the giver.)		30000	30000
3	Purchased a/c Dr To Cash a/c (being goods purchased for cash) (Concept: Goods is real account. Debit what comes in Cash is Real account. Cedit what goes out)		5000	5000
4	Shyam's a/c Dr To Cash a/c (being the amount paid to Shyam) (Concept: Shyam is a personal account. Debit the receiver. Cash is a real account. Credit what goes out)		3000	3000
5	Cash a/c Dr To Mohan's a/c (being cash received from Mohan) (Concept: cash is real account. Debit what comes in. Mohan is personal account. credit the giver)		5000	5000
6	Furniture a/c Dr To cash a/c (being furniture purchased for cash) (Concept: furniture is the real account. Debit what comes in. cash is real account. Credit what goes out)		3000	3000
7	Wage a/c Dr To Cash a/c (being wages paid) (concept : wages is a nominal account. Debit all expenses. Cash is a real account. Credit what goes out.)		400	400
8	Cash a/c Dr To Commissions a/c (being commission received) (concept: cash is a real account. Debit what comes in. commission is nominal account. Credit all incomes.)		300	300
9	Gopal a/c Dr To Purchased Return a/c (being goods returned to gopal) (Concept: Gopal is a personal Account. Debit the receiver. Goods is the Real Account. Credit what goes out)		500	500

10	Karims' a/c Dr To Sales a/c (being goods sold to Karim) (Concept: karim is a personal account. Debit the receiver. Good is a real account. Credit the giver)		15000	15000
11	Postage and telegram a/c Dr To Cash a/c (being postage and telegram paid) (Concept: Postage nad telegram account is a nominal account. Debit all expenses. Cash is a real account. Credit what goes out.)		300	300
12	Sale's return a/c Dr To Karim's a/c (being goods returned by Karim) (Concept: Goods real Account. Debit what comes in. karim' is a personal account. Credit the giver)		500	500
19	Cash a/c Dr To Sale's a/c (being goods solds for cash) (Concept: cash is a real account. Debit what comes in. goods is a real account. Credit what goes out)		1000	1000
21	Ahuja's Drawing a/c Dr To Cash a/c (being the cash drawn for personal use) (Concept: drawing is a personal account. Debit the receiver. Cash is a real account. Credit what goes out)		1500	1500
23	Purchase a/c Dr To Cash a/c (being goods purchased for cash) (Concept: Goods is a real account. Debit what comes in. cash is a real account. Credit what goes out)		2000	2000
31	Rent a/c Dr To Cash a/c (being rent paid) (Concept: Rent is a nominal account. Debit all expenses. Cash is a real account. Credit what goes out)		250	250

Table 2.10 Solution

2.4 Ledger

Ledger is the main book of account in which various accounts of personal, real and nominal nature, are opened and maintained. As all the business transactions are recorded chronologically in the journal, it is very difficult to obtain all the transactions pertaining to one head of account together at one place. However, the preparation of different ledger accounts helps to get a consolidated picture of the transactions pertaining to one ledger account at a time. Thus, a ledger account may be defined as a summary statement of all the transactions relating to a person, asset, expense, or income or gain or loss which have taken place during a specified period and shows their net effect ultimately. From the above definition, it is clear that when transactions take place, they are first entered in the journal and subsequently posted to the concerned accounts in the ledger. Posting refers to the process of entering in the ledger the information given in the journal. In the past, the ledgers were kept in bound books. However, with the passage of time, they became loose-leaf ones and the advantages of the same lie in the removal of completed accounts, insertion of new accounts and arrangement of accounts in any required manner.

2.4.1 Ruling of Ledger Account

The ruling of a ledger account is as follows:

Type-1

Date	Particular	J.F.	Rs.	Date	Particulars	J.F.	Rs.
	To name of the account to be credited				By name of the account to be debited		

Type-2

Date	Particular	J.F.	Dr. Rs.	Cr. Rs.	Dr./Cr.	Balance Rs.
	To name of the account to be credited				By name of the account to be debited	

Ledger Account Type 1 is followed in almost all the business concerns, whereas Type 2 is followed only in banking institutions to save space, time and clerical work involved.

2.4.2 Sub-Division of Ledger

In a big business, the number of accounts is numerous and it is necessary to maintain a separate ledger for customers, suppliers and for others. Usually, the following three types of ledgers are maintained in such big business concerns.

- Debtors' Ledger: It contains accounts of all customers to whom goods have been sold on credit. From the Sales Day Book, Sales Returns Book and Cash Book, the entries are made in this ledger. This ledger is also known as sales ledger.
- Creditors' Ledger: It contains accounts of all suppliers from whom goods have been bought on credit. From the Purchases Day Book, Purchases Returns Book and Cash Book, the entries are made in this ledger. This ledger is also known as Purchase Ledger.
- General Ledger: It contains all the residual accounts of real and nominal nature. It is also known as Nominal Ledger.

2.5 Distinction Between Journal and Ledger

The journal and the ledger are the most important books of the double entry system of accounting. The points of difference between these two types of books are as follows:

- Journal is a book of prime entry, whereas ledger is a book of final entry.
- Transactions are recorded daily in the journal, whereas posting in the ledger is made periodically.
- In the journal, information about a particular account is not found at one place, whereas in the ledger information about a particular account is found at one place only.
- Recording of transactions in the journal is called journalising and recording of transactions in the ledger is called posting.
- A journal entry shows both the aspects, debit as well as credit, but each entry in the ledger shows only one aspect.
- Narration is written after each entry in the journal, but no narration is given in the ledger.
- Vouchers, receipts, debit notes, credit notes etc., form the basic documents for journal entry, whereas journal constitutes basic record for ledger entries.

2.6 Steps in Posting from Journal to Ledger

While posting record from general Journal to Ledger the following procedures are generally observed.

In the Ledger

- Locate the corresponding account in the Ledger
- Transfer the following information from Journal to Ledger
  - Date
  - Explanation
  - Debit and Credit Amount

Place the page of Journal, where the transferred information is located in the post reference column of the ledger account.

In the Journal

Posting the ledger is usually made periodically. The transaction recorded in the general journal posted to the general ledger at the end of each day, week or month depending on the needs of business for an updated account balance.

Sample Example of Journal entries and the posting to Ledger Account
Transaction Details

- Commenced business with cash Rs. 50,000.
- Sold goods for cash Rs.500.
- Received cash for commission from XYZ Co. Rs. 1,000
- Purchased goods for cash Rs. 5,000
- Purchased furniture from R&C Lab. Rs. 7,000
- Salaries paid to staff Rs. 3,000
- Paid cash to R&C Lab Rs. 1,000

Journal

Date	Particulars	Amount (Dr)	Amount (Cr)
1	Cash a/c Dr To Capital a/c	50,000	50,000
2	Cash a/c Dr To Goods a/c	500	500
3	Cash a/c Dr To Commission a/c	1,000	1,000
4	Goods a/c Dr To Cash a/c	5,000	5,000
5	Furniture a/c Dr To R&C Lab a/c	7,000	7,000
6	Salaries a/c Dr To Cash a/c	3,000	3,000
7	R&C Lab a/c Dr To Cash a/c	1,000	1,000

Ledger

Cash Account

Dr Cr

	Amount (Rs)		Amount (Rs)
To Capital A/c	50,000	By Goods a/c	5,000
To Goods a/c	500	By Salaries a/c	3,000
To commission a/c	1,000	By R&C Lab a/c	1,000

	Amount (Rs)		Amount (Rs)
To Cash a/c	3,000		

R&C Lab Account

	Amount (Rs)		Amount (Rs)
To cash a/c	1,000	By Furniture a/c	7,000

Capital Account

	Amount (Rs)		Amount (Rs)
		By Cash a/c	50,000

Furniture Account

	Amount (Rs)		Amount (Rs)
To R&C Lab a/c	7,000		

Goods Account

	Amount (Rs)		Amount (Rs)
To Cash a/c	5,000	By Cash a/c	500

Commission Account

	Amount (Rs)		Amount (Rs)
		By Cash a/c	1,000

Salaries Account

2.7 Subsidiary Books

Journal is subdivided into various parts known as subsidiary books or subdivisions of journal. Each one of the subsidiary books is a special journal and a book of original or prime entry. There are no journal entries when records are made in these books. Recording the transactions in a special journal and then in the ledger accounts is the practical system of accounting which is also referred to as English System. Though the usual type of journal entries are not passed in these sub-divided journals, the double entry principles of accounting are strictly followed.

2.8 Kinds of Subsidiary Books

There are different types of subsidiary books which are commonly used in any big business concern. They are:

Purchases book

This book is used to record all credit purchases made by the business concern from its suppliers. This book is also known as 'Purchases Books', 'Purchases Journal' or 'Invoice Book'. It contains five columns, viz., Date, Particulars, Ledger Folio, Inward Invoice Number and Amount. Whenever any credit purchase is made, the date on which the transaction has taken place is entered in the 'Date Column', the name of the party from whom the purchase has been made the particulars column, the inward invoice number with which the purchase has been made in the 'inward Invoice Number Column' and the money value of the purchase in the 'Amount Column'. The 'L.F. Column' is to record the ledger folio number while posting is made.

Posting: The total of purchases book for a specified period is debited to the purchases account in the Ledger. The personal accounts are posted by crediting the individual accounts.

Sales books

This book is used to record all credit sales by the business to its customers. This book is also called as 'Sales Book', 'sales Journal' or 'Sold Book'. It contains five columns, viz., Date, Particulars, L.F., Outward Invoice Number and Amount. When any credit sales is effected, the date is entered in the 'Date Column', the name of the party to whom the sale is made in the 'Particulars Column', the invoice number with which the sales have been effected in the 'Out-ward Invoice Number Column' and the money value of the sales in the 'Amount Column', The LF column is entered while posting is effected.

Posting: The total of the Sales Book for a specified period is credited to the Sales Account in the Ledger. The personal account is posted by debiting the individual accounts. The specimen ruling of a Sales Book is as follows:

Date	Particulars	L.F.	Outward Invoice Number	Amount Rs.

Purchases returns books

This book is used to record all transactions relating to the goods returned to suppliers. This book is also known as 'Purchases Returns journal' or 'Returns Outward Book'. The specimen ruling of a Purchases Returns Book is given below:

Date	Name of Supplier	L.F.	Debit note	Amount Rs.

The columns in this book are similar to those of Purchases Book except the Debit Note Column in which the debit note number is recorded. A debit note represents a note sent to the supplier for the value of goods retuned by the business. While posting, all the personal accounts are debited in the Ledger and the total of Purchases Returns Book is credited to Purchases Returns Account.

Sales returns books

This book is used to record all transactions relating to goods returned by customers. This book is also known as 'Sales Return Journal' or 'Returns Inwards Book', the specimen ruling of sales returns book is given below:

Date	Name of Customer	L.F.	Credit note	Amount Rs.

The columns in this book are similar to those of Sales Book except the Credit Note Column in which the credit note number is recorded. A credit note represents a note sent to the customer for the value of the goods returned by him. While posting, all the personal accounts are credited in the Ledger and the total of sales returns book is debited to Sales Returns Account.

Bills receivable book

This book is used to record all the bills received by the business from its customers. It contains details regarding the name of the acceptor, date of the bill, place of payment, term of the bill, due date and the amount of the bill. The specimen ruling of a Bills Receivable Book is given below:

Sl. No	Date of Receipt	L.F.	Drawer	Acceptor	Term	Due Date	Rs.	Remarks

While posting, the individual customers' accounts will be credited and the total of the Bills Receivable Book for a specified period will be debited to the Bills Receivable Account in the Ledger.

Bills payable book

This book is used to record all the bills accepted by the business drawn by its creditors. It contains details regarding the name of the drawer, payee and date of acceptance, due date, place of payment, term and amount of the bill. The specimen ruling of Bills Payable Book is given below:

Sl. No	Date of Acceptance	Drawer	Payee	L.F.	Where payable	Date of bill	Term	Due Date	Rs.	Remarks

While posting the individual drawer or payee account is debited and the Bills payable account is credited with the total in the Bills Payable Book.

2.9 Journal Proper

This book is used to record all the residual transactions which cannot find place in any of the subsidiary books. While recording, the entries are made in the journal covering both the aspects of the transaction. The following are some of the examples of transactions which are entered in this book.

- Opening entries and closing entries
- Adjusting entries
- Transfer entries from one account to another account
- Rectification entries
- Bills of Exchange Entries
- Credit Purchase/sale of an asset other than goods

2.10 Cash Book

Cash book is a sub-division of Journal recording transactions pertaining to cash receipts and payments. Firstly, all cash transactions are recorded in the cash book and then they are posted subsequently to the respective ledger accounts. The cash book is maintained in the form of a ledger with the required explanation called as narration and hence, it plays a dual role of a journal as well as a ledger. All cash receipts are recorded on the debit side and all cash payments are recorded on the credit side. All cash transactions are recorded chronologically in the cash book.

The Cash Book will always show a debit balance since payments cannot exceed the receipts at any time. From the above explanation, it can be observed that the Cash Book serves as a subsidiary books as well as ledger. Depending upon the nature of business and the type of cash transactions, various types of Cash books are used. They are:

- Single or simple column cash book: This is the simplest form of Cash Book and is used when payments and receipts are mostly in the form of cash and, where usually no cash discount is allowed or received. However, when transactions involving discounts are effected, it is recorded in a separate ledger account. The ruling of Single Column Cash Book is as follows:

Dr.									Cr.
Date	Particulars	R.No.	L.F.	Rs.	Date	Particulars	V.No.	L.F.	Rs.

Once the Cash Book is entered with all the cash transactions, posting of the entries is made to the respective ledger accounts subsequently. For posting, from the debit side of the Cash Book, the concerned accounts are credited and from the credit side, the concerned accounts are debited. Two column cash book or cash book with cash and discount columns: This type of Cash book is used when cash transactions involving discount, allowed or received, are effected. Usually, discount is allowed when payments are promptly made by the customers and discount is also

enjoyed when payments are promptly made by the business. In this two column Cash Book, instead of only one column for cash as in a single column cash book, one additional column is introduced, viz., 'discount column'. The discounts allowed by the business are entered on the debit side and discounts received are entered on the credit side of the Cash Book. The discount columns as such cannot be balanced since they are purely memorandum columns and will not serve the purpose of a ledger account as the cash columns do. To know the balance of discount columns, separate ledger accounts, viz., and discount allowed account and discount received account can be opened. The ruling is as follows:

Dr.											**Cr.**
Date	**Particulars**	**R.No.**	**L.F.**	**Discount Allowed**	**Rs.**	**Date**	**Particulars**	**V.No**	**L.F.**	**Discount received**	**Rs.**

Posting

The following points should be kept in mind while posting from the cash book.

- The opening and closing balances should not be posted.
- From the debit side of the cash book, all the concerned accounts are given credit.
- From the credit side of the cash book, all the concerned accounts are given debit.
- While posting the cash received from a debtor or cash paid to a creditor, due care should be taken to credit the personal account with the amount of both cash and discount allowed or debit the personal account with the amount of both cash and discount received.
- Separate accounts should be opened for discount allowed and discount received. The total of the discount allowed column represents a loss sustained by the business and the same should be debited to discount allowed account by writing 'To sundries' in the particulars column. The total of the discount received column represent as gain made by the business and it should be credited to the discount account by writing 'By Sundries' in the particulars column.
- Three column cash book or cash book with cash, bank and discount columns: Nowadays, every businessman invariably has a bank account to reap the advantages of safety, convenience, credit facilities and less clerical work. Thus, when a business is maintaining a bank account, the transactions can be made through cheques. Instead of maintaining the bank account in the ledger, it is found more convenient if it is included in the Cash Book as Cash Column. Thus, the three columns Cash Book is the resultant effect, where in addition to cash and discount columns, bank column is also included. The ruling is as follows :

Dr.														**Cr.**
Date	**Particulars**	**R.No.**	**L.F.**	**Discount allowed Rs.**	**Cash Rs.**	**Bank Rs.**	**Date**	**Particulars**	**V.No.**	**L.F.**	**Discount received Rs.**	**Cash Rs.**		**Bank Rs.**

'Bank' cash book or cash book with bank and discount columns: In case of a business, where all transactions are effected through bank, i.e., all receipts are banked (deposited into the bank) on the same day and all payments are made by cheques only, the cash column in the cash book is of no use. Hence, the Cash Book with bank and discount columns alone is maintained.

Dr.											**Cr.**
Date	**Particulars**	**R.No.**	**L.F.**	**Discount allowed**	**Bank Rs.**	**Date**	**Particulars**	**V.No.**	**L.F.**	**Discount received**	**Bank Rs.**

- Petty Cash Book: The word 'petty' has its origin from the French word which means small. The petty cash book is used to record items like carriage, cartage, entertainment expenses, office expenses, postage and telegrams, stationery, etc. The person who maintains this book is called the 'petty cashier'. The petty cash book is used by many business concerns to save the much valuable time of the senior official, who usually writes up the main cash book, to prevent over burdening of the main cash book with so many petty items and to find out readily and easily information about the more important transactions. The amount required to meet out various petty items is estimated and given to the petty cashier at the beginning of the stipulated period, say a fortnight or a month. When the petty cashier finds shortage of money, he has to submit the petty cash book, after making all the entries, to the chief cashier for necessary verifications. The chief cashier in turn, verifies all the entries with supporting vouchers and disburses cash or issues cheque for the exact amount spent.

Columnar petty cash book or analytical petty cash book

In this cash book, various items of petty cash payments are analysed and separate analytical columns are provided for recording each and every item. The amount of cash received from the chief cashier for meeting out the petty expenses is recorded on the debit side and the actual cash payments towards various petty items are recorded on the credit side in the total as well as analytical columns. The analytical column is provided for each usual head of expense like postage & telegrams, printing & stationery, carriage & cartage, traveling expenses, entertainment expenses, office expenses, sundry expenses, etc. Subsequently, the totals of these analytical columns are posted to the respective ledger accounts which save the labour used in posting each item of payment separately in the ledger. The balancing of petty cash book is done in the total payments column. Where the debit side (Receipts) exceeds that of the credit side (in the totals column-Payments), it represents the unspent balance of cash remaining with the petty cashier.

2.11 Basic Document for Subsidiary Books

The various basic documents for subsidiary books are as follows:

Inward invoice

This is the document sent by the suppliers of goods giving details of the goods sent, price, value, discount etc. It is the basis for entries in purchases book.

Outward invoice

This is a document sent by the firm to the customers, showing the details of goods supplied, their price and value, discounts etc. It is the basis for writing a sales book.

Debit note

It is a simple statement sent by a person to another person showing the amount debited to the account of the latter along with a brief explanation. The debit notes are issued by a trader relating to purchase returns in order to put up his claim for abatement of his dues to the other party. Debit notes are serially numbered and are similar to invoices although they are usually printed in red ink.

Credit note

It is nothing, but a statement sent by one person to another person showing the amount credited to the account of the latter along with a brief explanation. The credit notes are used for sales return in order to intimate related abatement and are similar to invoice although they are usually printed in red ink.

Cash receipts and vouchers

These are the vouchers and receipts for cash received and paid. Entries in cash book are made on the strength of the vouchers and receipts. They are also useful for auditing purpose. For any single transaction the same account cannot be debited and credited. However, as cash and bank accounts are maintained in the cash book, the debit and credit may be found in the two different accounts in the Cash Book. They are transactions which affect both the sides of the Cash Book. For instance, when cash is deposited into the bank, bank account should be debited and cash account should be credited. Hence, on the debit side of the Cash Book. 'To Cash' is written in the particulars column and the amount is entered in the bank column. Similarly, on the credit side of the Cash Book, 'By Bank' is written in the particulars column and the amount is entered in the cash column. When cash is withdrawn from the bank, on the debit side of the Cash Book, 'To Bank' is written in the particulars column and the amount is written in the cash column.

Likewise, on the credit side of the Cash Book, 'By Cash' is written in the particulars column and amount is entered in the bank column. Therefore, those entries which appear on both the sides of the Cash Book are called Contra Entries and they are identified and denoted in the Cash Book itself by writing the letter 'C' in the Ledger Folio Columns on either side. For these transactions, as double entry procedure is completed in the cash book itself, no further positing is made in the ledger. In a three columnar Cash Book, cash and bank columns are balanced as any other ledger account and discount columns are imply totalled. To know the balance of the discount columns, a separate account, viz., discount account is opened in the ledger. While the cash column will always show a debit balance, the bank column may show a credit balance at times. The credit balance in the bank column represents nothing, but bank overdraft.

2.12 Advantage of Subsidiary Books

The advantages of maintaining special journals are as follows:

- Division of work: The division of journal resulting in division of work ensures more clerks working independently in recording original entries in day books.
- Facilitate posting: Because the transactions of one nature are recorded at one place, the posting of real account is highly facilitated.
- Time Saving: Due to division of work, it is possible to perform various accounting processes simultaneously. Thus, less time is required to complete accounting records.
- Minimum frauds and errors: Systematic recording of business transactions in special journals reduces the possibility of frauds and errors. It also helps in location of errors, if any.
- Better information: A lot of useful data like credit sales, credit purchases, returns etc., is made available and it is not possible in the journal system.
- Management decisions facilitated: Since transactions of a similar nature are recorded at one place, the management can have the benefit of the trend and distributional pattern in planning and making decisions.
- Specialisation and efficiency: When the same work is allotted to a particular person over a period of time, he acquires full knowledge of it and becomes efficient in handling it. Thus, the accounting work is done efficiently.

2.13 Imprest System

In this system, the petty cashier is provided with a sum of cash, which is termed as 'float', after taking into consideration the possible kinds of expenses which would be incurred for a specific period, viz., a week or a month. The petty cashier, at the end of such period, submits the petty cash book, with all the entries to the chief cashier. The chief cashier, in turn, will verify all the entries with the supporting vouchers and gives the actual amount spent on various petty items. This would bring the petty cash balance to the original amount with which he has begun. This system of maintaining the original amount of cash is known as 'Imprest System of maintaining Petty Cash Book'.

2.14 Discounts

The two types of discounts are:

Trade discount

When a customer buys goods regularly, buys large quantity or buys for a large amount, the seller is usually inclined to allow a concession in price. He will calculate the total price according to the list of catalogue. However, after the total is arrived at, he will make a deduction 5% or 10% depending upon his business policy. This deduction is known as Trade discount.

Cash discount

An amount which is allowed for the prompt settlement of debt arising out of a sale within a specified time and calculated on a percentage basis is known as cash discount, i.e., it is always associated with actual payment.

Summary

- Journal is a simple book of accounts in which all the business transactions are originally recorded in chronological order and from which they are posted to the ledger accounts at any convenient time.
- Journalising refers to the act of recording each transaction in the journal and the form in which it is recorded, is known as a journal entry.
- All the business transactions are recorded chronologically in the journal.
- Ledger is the main book of account in which various accounts of personal, real and nominal nature, are opened and maintained.
- Posting refers to the process of entering in the ledger the information given in the journal.
- Journal is a book of prime entry, whereas ledger is a book of final entry.
- Journal is subdivided into various parts known as subsidiary books or subdivisions of journal.
- The total of purchases book for a specified period is debited to the purchases account in the Ledger.
- A debit note represents a note sent to the supplier for the value of goods retuned by the business.
- While posting, all the personal accounts are debited in the Ledger and the total of Purchases Returns Book is credited to Purchases Returns Account.
- A credit note represents a note sent to the customer for the value of the goods returned by him.
- While recording, the entries are made in the journal covering both the aspects of the transaction.
- Cash Book is a sub-division of Journal recording transactions pertaining to cash receipts and payments.
- The cash book is maintained in the form of a ledger with the required explanation called as narration.
- While posting the cash received from a debtor or cash paid to a creditor, due care should be taken to credit the personal account with the amount of both cash and discount allowed or debit the personal account with the amount of both cash and discount received.
- The petty cash book is used to record items like carriage, cartage, entertainment expenses, office expenses, postage and telegrams, stationery, etc.
- When the petty cashier finds shortage of money, he has to submit the petty cash book, after making all the entries, to the chief cashier for necessary verifications.
- The balancing of petty cash book is done in the total payments column.
- The credit notes are used for sales return in order to intimate related abatement and are similar to invoice although they are usually printed in red ink.
- Entries in cash book are made on the strength of the vouchers and receipts.
- In a three columnar Cash Book, cash and bank columns are balanced as any other ledger account and discount columns are imply totalled.
- An amount which is allowed for the prompt settlement of debt arising out of a sale within a specified time and calculated on a percentage basis is known as cash discount.

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Self Assessment

1. _____ refers to the act of recording each transaction in the journal and the form in which it is recorded, is known as a journal entry.
   a. Date
   b. Particulars
   c. Ledger
   d. Journalising

2. Which of the following is not one of the columns of a journal?
   a. Journal folio
   b. Particulars
   c. Date
   d. Amount (credit)

3. _____ column is meant to record the reference of the main book.
   a. Ledger folio
   b. Ledger
   c. Debit
   d. Credit

4. Which of the following is not one of the types of journal?
   a. Cash receipt journals
   b. Cash payment journals
   c. Sales journal
   d. Creditors journal

5. _____ is the main book of account in which various accounts of personal, real and nominal nature, are opened and maintained.
   a. Ledger folio
   b. Ledger
   c. Debit
   d. Credit

6. Which of the following is not one of the types of ledger?
   a. Debtors' Ledger
   b. Sales Ledger
   c. Creditors' Ledger
   d. General Ledger

7. Which of the following statements is false?
   a. In the journal, information about a particular account is found at one place.
   b. In the ledger information about a particular account is found at one place only.
   c. A journal entry shows both the aspects debit as well as credit.
   d. Narration is written after each entry in the journal.

8. _____ book is used to record all credit purchases made by the business concern from its suppliers.
   a. Sales
   b. Purchase
   c. Sales return
   d. Bills receivable

9. _____ is a sub-division of Journal recording transactions pertaining to cash receipts and payments.
   a. Cash receipt journals
   b. Cash book
   c. Cash payment journals
   d. Sales journal

10. _____ is the document sent by the suppliers of goods giving details of the goods sent, price, value, discount etc. It is the basis for entries in purchases book.
   a. Inward invoice
   b. Outward invoice
   c. Cash book
   d. Debit note

Chapter III

Trial Balance and Accounts

Aim

The aim of this chapter is to:

- introduce trial balance
- elucidate the limitation of trial balance
- explain the preparing of trial balance

Objectives

The objectives of this chapter are to:

- explain the errors in trial balance
- explicate the profit and loss account
- elucidate the trading account

Learning outcome

At the end of this chapter, you will be able to:

- understand the manufacturing account
- identify the preparation of accounts
- recognise the principles of preparing accounts

3.1 Introduction

One of the major reasons for recording transactions in accounts is to provide the information needed for financial reports. However, before the information can be used to prepare these reports, it is necessary to check the accuracy of the entries that were recorded. According to the dual aspect concept, the total of debit balance must be equal to the credit balance. It is a must that the correctness of posting to the ledger accounts and their balances be verified. This is done by preparing a trial balance.

3.2 Trial Balance

Trial balance is a statement prepared with the balances or total of debits and credits of all the accounts in the ledger to test the arithmetical accuracy of the ledger accounts. As the name indicates it is prepared to check the ledger balances. If the total of the debit and credit amount columns of the trial balance are equal, it is assumed that the posting to the ledger in terms of debit and credit amounts is accurate. The agreement of a trial balance ensures arithmetical accuracy only.

A concern can prepare trial balance at any time, but its preparation as on the closing date of an accounting year is compulsory. According to M.S. Gosav "Trial balance is a statement containing the balances of all ledger accounts, as at any given date, arranged in the form of debit and credit columns placed side by side and prepared with the object of checking the arithmetical accuracy of ledger postings". The format of trial balance is as follows:

Sr.No.	Name of the Accountant	Ledger folio	Debit balance	Credit Balance

The Trial Balance has three main columns, Account Name, Debit column and Credit column. In Ledger Account the name of the account is written, Debit column the debit balances and in credit column credit balances are written. Then the columnar total is done and compared.

Steps for preparing the trial balance

- Write the name of Ledger Account in the Account name column.
- Then write the balance amount of both debit and credit side.
- Add the amounts of both the sides (Debit and credit).

Important Items and their Balances

Items	**Debit**	**Credit**
Capitala/c		**✓(unless stated as Dr**
Balance)		
Drawing	✓	
Purchases	✓	
Sales		✓
Return Outwards		✓
Return Inwards	✓	
Carriage Inward	✓	
Carriage Outward	✓	
Stock	✓	
Loan (taken)		✓
Loan (given)	✓	
Land and Building	✓	
Patent	✓	

Goodwill	✓	
Royalty	✓	
Investment	✓	
Debtor	✓	
Creditor		✓
Bank Overdraft		✓

Table 3.1 Important items and their balances

3.2.1 Objectives of Trial Balance

The various objectives of Trial balance are as follows:

- It gives the balance of all the accounts of the ledger. The balance of any account can be found from a glance from the trial balance without going through the pages of the ledger.
- It is a check on the accuracy of posting. If the trial balance agrees, it proves:
  - That both the aspects of each transaction are recorded
  - That the books are arithmetically accurate
- It facilitates the preparation of profit and loss account, and the balance sheet.
- Important conclusions can be derived by comparing the balances of two or more than two years with the help of trial balances of those years.

3.2.2 Features of Trial Balances

The important features of trial balance are as follows:

- A trial balance is prepared on a specified date.
- It contains a list of all ledger accounts including cash account.
- It may be prepared with the balances or totals of Ledger accounts.
- Total of the debit and credit amount columns in the trial balance must tally.
- If the debit and credit amounts are equal, we assume that ledger accounts are arithmetically accurate.
- Difference in the debit and credit columns points out that some mistakes have been committed.
- Tallying of trial balance is not a conclusive profit of accuracy of accounts.

3.2.3 Limitations of Trial Balances

The important limitations of trial balances are as follows:

- The trial balance can be prepared only in those concerns, where double entry system of book-keeping is adopted. This system is too costly.
- A trial balance is not a conclusive proof of the arithmetical accuracy of the books of account. It the trial balance agrees, it does not mean that now there are absolutely no errors in books. On the other hand, some errors are not disclosed by the trial balance.
- It the trial balance is wrong, the subsequent preparation of Trading, P&L Account and Balance Sheet will not reflect the true picture of the concern.

3.2.4 Methods of Preparing Trail Balance

A trail balance refers to a list of the ledger balances as on a particular date. It can be prepared in the following manner:

- Total method: According to this method, debit total and credit total of each account of ledger are recorded in the trial balance. Then, the debit side and credit side of ledger accounts are added up. The debit totals are placed in debit column and credit totals in credit column. The total of debit column and credit column should agree.

- Balance method: According to this method, only balance of each account of ledger is recorded in trial balance. Some accounts may have debit balance and the other may have credit balance. All these debit and credit balances are recorded in it. This method is as follows:
  - Record the account titles in numerical order in the first column.
  - Record the account number in the second column.
  - Record the balances of each account, the debit balance in debit column and credit balance in credit column.
  - Add the debit and credit columns and record the totals.
  - Compare the totals

The first step in the preparation of the trial balance is to balance all ledger accounts. This is done after posting of all the entries from books of original entry to the ledger. Balancing of an account is done by putting the difference between the two sides of an account on the side, which is short.

This leads to the equalisation of two sides of an account. A trial balance has four columns. The first column is the account code/number, the second column is the title/name of the account, and the third and fourth columns are the debit and credit columns respectively, where the amount of balance of each account is entered.

3.3 Errors

Trial balance is prepared to check the arithmetical accuracy of accounts. If the trial balance does not tally, it implies there are arithmetical errors in the account which require locations. Even if the trial balance tally there may still exists some errors. There are two types of errors:

- Errors which are not revealed by trial balance
- Errors which are revealed by trial balance

Errors may occur throughout the various stages of the accounting cycle, including:

- At the recording stage: Generally these errors include errors of omission, principle and commission.
- At the posting stage: Here you may find partial or complete errors of omission, as well as errors of commission (posting to the wrong side, the wrong account or the wrong amount).
- At the balancing stage: Both incorrect totaling and errors in balancing can influence the balanc

Errors can be classified into the following four categories on the basis of the nature of errors and explained here under.

- Errors of commission
- Errors of omission
- Errors of principle
- Compensating (offsetting) errors

Error of commissions

These errors by definition are of clerical nature. These errors may be committed at the time of recording and/or posting. At the time of recording, the wrong amount may be recorded in journal which will be carried throughout. Such errors will not affect the agreement of the trial balance. These errors may also be committed at the time of posting, by way of posting wrong amount, to the wrong side of an account or the wrong account. The errors resulting in posting to wrong account will not affect agreement of trial balance, whereas, other errors of posting will resulting disagreement of trial balance. For example, an amount of Rs.10, 000 received from the customer (Debtor) is correctly recorded on the debit side of the cash book, but while posting, the customer's account is credited withRs.1, 000. This is an error, which is committed at the time of posting, by placing wrong amount to the account. This will result in disagreement of trial balance as the credit total of the trail balance will be short by Rs. 9,000.

Error of omission

The errors of omission may be committed at the time of recording the transaction in the books of original entry or while posting to the ledger. An omission may be complete or partial. Such errors are known as errors of omission. For example, machinery purchased for Rs. 50,000 by issuing a cheque is recorded first in the credit side of cash book, in the bank column. Suppose it is not posted to the debit of machinery account, it is an error of partial omission. The trial balance will not tally. Suppose the transaction is not entered in the cash book and hence it is ignored completely; this is a case of complete omission. It means as if the transaction has not taken place at all. It will not affect the trial balance and hence the trial balance will tally. This is true only in case of complete omission.

Error of principle

Accounting entries are recorded as per the generally accepted accounting principles. If any of these principles are violated or ignored, errors resulting from such violations are known as errors of principle. As an illustration, periodicity principle requires maintaining proper distinction between capital and revenue items. An error of principle may occur due to incorrect classification of expenditure or receipts between capital and revenue. This is very important because it will have an impact on financial statements. It may lead to under/over stating of income or assets or liabilities, etc. For example, amount spent on additions to the buildings should be treated as capital expenditure and must be debited to the asset account. Instead, if this amount is debited to maintenance and repairs account, it is treated as a revenue expense. This is an error of principle. Since instead of asset account, i.e. buildings, the maintenance and repairs account (expense) is debited, the trial balance will still tally, but would not be correct as per the generally accepted accounting principles. Such errors are not disclosed by the trial balance. This will result in understating of income due to the extra charge under maintenance and repairs account and understating the value of buildings in the balance sheet.

Compensating (offsetting) errors

When two or more errors are committed in such a way that the net effect of these errors on the debits and credits of accounts is nil, such errors are called compensating errors. They do not affect the tallying of the trial balance. For example: In a credit sale transaction, the sales account is credited in excess by say, Rs.5,000 and similarly the suppliers account in case of a credit purchase is understated by Rs.5,000, this is a case of two errors compensating for each other's effect. It is to be noted that extra credit to the sales account is offset by lower credit to the creditor's account, both being credit balance. Since, one plus is set off by the other minus, the net effect of these two errors being of compensating nature and do not affect the agreement of trial balance.

Illustration

From the following Ledger of "ABC Pvt. Ltd." prepare a Trial Balance on 31st January, 2010.

Dr Cr

Date	Particulars	JF	Amount (Rs)	Date	Particulars	JF	Amount (Rs)
2010 Jan-31	Balanced c/d		100000	2010 Jan-31	Bank a/c		100000
			100000				100000
				Feb-1	Balance b/d		100000

Sales Account

Date	Particulars	JF	Amount (Rs)	Date	Particulars	JF	Amount (Rs)
2010 Jan-31	Balanced transferred to Trading Account		70,000	2010 Jan-8	Bank a/c		24,000
			70,000	Jan-15	Ram's a/c		46,000
							70,000

Purchase Account

Date	Particulars	JF	Amount (Rs)	Date	Particulars	JF	Amount (Rs)
2010 Jan-5	Pranay's a/c		40,000	2010 Jan-31	Stock a/c		15,000
Jan-18	Bank a/c		55,000	Jan-15	Balance transferred to Trading Account		80,000
			95,000				95,000

Ram's Account

Date	Particulars	JF	Amount (Rs)	Date	Particulars	JF	Amount (Rs)
2010 Jan-15	Sales a/c		46,000	2010 Jan-31	Balance c/d		46,000
			46,000				46,000
Feb-1	Balance b/d		46,000				

Pranay's Account

Date	Particulars	JF	Amount (Rs)	Date	Particulars	JF	Amount (Rs)
2010 Jan-31	Balance b/d		40,000	2010 Jan-5	Purchase a/c		40,000
			40,000	Feb-1	Balance b/d		40,000

Rent Account

Date	Particulars	JF	Amount (Rs)	Date	Particulars	JF	Amount (Rs)
2010 Jan-31	Balance transferred to profit and loss a/c		15,00	2010 Jan-31	Bank a/c		15,00
			15,00				15,00

Bank Account

Date	Particulars	JF	Amount (Rs)	Date	Particulars	JF	Amount (Rs)
	Capital a/c Sales a/c Rent received		1,00,000 24,000 1,500		Purchase a/c Commission a/c Drawing a/c Balance c/d		55,000 1,800 2,000 66,700
			1,25,500				1,25,500

Commission Account

Date	Particulars	JF	Amount (Rs)	Date	Particulars	JF	Amount (Rs)
2010				2010			
Jan-20	Bank a/c		1,800	Jan-31	Balance transferred to profit and loss a/c		1,800
			1,800				1,800

Stock Account

Date	Particulars	JF	Amount (Rs)	Date	Particulars	JF	Amount (Rs)
2010				2010			
Jan-31	Purchase a/c		15,000	Jan-31	Balance c/d		15,000
			15,000				15,000
	Balance b/d		15,000				

Drawing Account

Date	Particulars	JF	Amount (Rs)	Date	Particulars	JF	Amount (Rs)
2011				2011			
Jan -31	Bank a/c		2,000	Jan-31	Balance c/d		2,000
	Balance b/d		2,000				2,000
			2,000				

Solution

Name of the Account	Balance Amount (Dr)	Balance Amount (Cr)
Capital		1,00,000
Sales		70,000
Purchases	80,000	
Ram	46,000	
Pranay		40,000
Commission	1,800	
Rent Received		1,500
Drawing	2,000	
Closing stock	15,000	
Cash at Bank	66,700	
Total	**211500**	**211500**

3.4 Manufacturing Accounts

'Final statements' generally refer to the two statements prepared by a business concern at the end of every accounting year. They are:

- Income statement and
- Balance sheet

In case of "Trading Concerns", these statements are prepared under the headings:

- Trading and Profit and Loss account
- Balance sheet

In case of "Manufacturing Concerns", these statements are titled:

- Manufacturing, Trading, and Profit and Loss Account
- Balance Sheet

In case of "Limited Companies", they are called:

- Profit and Loss Account
- Profit and Loss Appropriation Account
- Balance Sheet

Manufacturing concerns which convert raw material into finished product is required to prepare manufacturing account and then prepare trading and profit and loss account. This is necessary because they have to ascertain cost of goods manufactured, gross profit and net profit.

The main purpose of manufacturing account is to show:

- Cost of the goods manufactured
- Major items of costs such as raw material consumed, productive wages, direct and indirect expenses of production.

3.5 Items in Manufacturing Account

There are two sides in a manufacturing account. They are explained as below.

3.5.1 Debit Side Items

Raw material consumed

Manufacturing account starts with the value of raw materials consumed, i.e., opening stock of raw materials along with the purchases and incidental expenses of purchase less closing stock of raw materials.

Direct wages and expenses

Direct wages and direct expenses are debited to manufacturing account. These are the wages and expenses directly identifiable with the output produced.

Indirect factory expenses

Expenses like factory rent, salaries, lighting, power, heat and fuel, machinery repairs, depreciation and other factory expenses are debited to manufacturing account. Total raw materials consumed, direct wages, direct expenses and factory expenses is the total manufacturing cost.

Opening work in progress

Work-in-progress is the semi-finished output. Opening work-in-progress is shown on the debit side of manufacturing account. The assumption is that it is completed into finished output during the current accounting period.

Sale of scrap
Scrap can be raw material scrap or indirect material scrap. It may be reduced from material cost on debit side. Alternatively, it can be shown on credit side of manufacturing account, like an income.

3.5.2 Credit Side
Closing work-in-progress
It represents the semi-finished output at the end of the accounting period and is credited to manufacturing account.

Sale of scrap
If it is direct material scrap, it can be reduced from raw material on debit side. However, in the absence of specific details, the amount from sale of scrap can be credited to manufacturing account. In that case, whether it is direct material scrap or indirect factory material scrap makes no difference.

Cost of finished goods manufactured
This is the balancing figure in the manufacturing account. It is transferred toas trading account.

		Rs.		Rs.
To work-in-progress (opening)		XXX	By Sale of scrap	XXX
To Material used	XXX		By Work-in-progress (closing)	XXX
Opening stock	XXX		By Cost of goods produced transferred to trading A/c (bal.fig)	XXX
Add: Purchases	XXX			
Less: Closing stock	XXX XXX			
		XXX		
To Wages	XXX	XXX		
To Factory expenses	XXX	XXX		
To Purchase expenses	XXX	XXX		
To Import duty	XXX	XXX		
To Carriage inward	XXX	XXX		
To Depreciation on machinery	XXX	XXX		
To Repairs to Machinery	XXX	XXX		
	XXX	XXX		XXX

Example for Manufacturing A/c for the year end

Illustration

From the following balances in the ledger of Mr. Kannusamy for the year ended 31-3-2002, prepare manufacturing account.

	Rs.
Opening work-in-progress	1,00,000
Opening stock of raw materials	55,000
Purchases of raw materials	10,00,000
Closing stock of raw materials	40,000
Carriage on purchases	10,000
Factory wages	50,000
Fuel and coal	45,000
Factory power	20,000
Depreciation on plant and machinery	15,000
Factory supervisor's salary	75,000
Closing work-in-progress	20,000

Solution:

Particulars	Rs.	Rs.	Particulars Rs.	Rs.
To opening work-in- progress		1,00,000	By Closing work-in-progress	20,000
To Raw materials used: Opening stock Add: Purchases	55,000 10,00,000		By Cost of goods Manufactured, transferred to trading A/c (Bal.fig)	13,10,000
	10,55,000			
Less: Closing stock	40,000	10,55,000		
To Carriage on purchase		10,000		
To Factory wages		50,0000		
To Fuel and coal		45,000		
To Factory power		20,000		
To Depreciation on plant and machinery		15,000		
To Supervisor's salary		75,000		
		13,30,000		13,30,000

3.6 Trading Account

Trading account is prepared for an accounting period to find the trading results or gross margin of the business i.e., the amount of gross profit that the business concern has made from buying and selling during the accounting period. The difference between the sales and cost of sales is the gross profit. For the purpose of computing cost of sales, value of opening stock of finished goods, purchases, direct expenses on purchasing and manufacturing are added up and closing stock of finished goods is reduced. The balance of this account shows gross profit or loss which is transferred to the profit and loss account.

3.6.1 Preparation of Trading Account

Trading account is a ledger account. It has to be prepared in conformity with double entry principles of debit and credit. The various items shown in trading account are listed under debit side and credit side. They are as follows:

Debit side

- Opening stock*:* The stock at the beginning of an accounting period is called opening stock. This is the closing stock as per the last balance sheet. It includes the stock of raw materials, work in progress, (where manufacturing account is not separately prepared) and finished goods. Trading account starts with opening stock on the debit side.
- Purchases: The total value of goods purchased after deducting purchase returns is debited to trading account. Purchases comprise of cash purchases and credit purchases.
- Direct expenses: Direct expenses are incurred to make the goods saleable. They include wages, carriage and freight on purchases, import duty, customs duty, clearing and forwarding charges, manufacturing expenses or factor expenses (where manufacturing account is not separately prepared). All direct expenses are extracted from trial balance.

Credit side

- Sales: It includes both credit and cash sales. Sales returns are reduced from sales and net sales are shown on the credit side of trading account. The sales and returns are extracted from the trial balance.
- Closing stock: Closing stock is the value of goods remaining at the end of the accounting period. It includes closing stock of raw materials, work progress (where manufacturing account is not separately prepared) and finished stock. The opening stock is ascertained from trial balance, but closing stock is not a part of ledger. It is separately valued and given as an adjustment. If it is given in trial balance, it is after adjustment of opening and closing stocks in purchases. If closing stock is given in trial balance, it is shown only as current asset in balance sheet. If closing stock is given outside trial balance, it is shown on credit side of trading account and also as current asset in the balance sheet.

3.7 Closing Entries Relating to Trading Account

The Journal entries given below are passed to transfer the relevant ledger account balances to trading account.

For opening stock, purchases and direct expenses.

Trading A/c	**Dr**	**xxx**	
To Opening Stock A/c			XXX
To Purchases (Net) A/c			XXX
To Direct expenses A/c			XXX

[Being transfer of trading a/c debit side items]

For transfer of sales (after reducing sales returns)

Sales (net) A/c	Dr	XXX	
To Trading A/c			XXX

[Being transfer of sales to Trading A/c]

For transferring gross profit

Trading A/c	Dr	XXX	
To profit and Loss A/c			XXX

[Being transfer of gross profit to P&L A/c]

For Gross Loss

Profit and Loss A/c	Dr	XXX	
To Trading A/c			XXX

[Being transfer of gross loss to P&L A/c]

Format of Trading Account

Debit		**Credit**	
Items	**Description**	**Items**	**Description**
Opening Stock	Stock on hand at the commencement of the year or period	Sales	Total sales made during the year
Purchases	It indicates total purchases both in credit and cash	Sales Return Inward/Outward	Sales return must be subtracted from the Total Sales to get Net Sale
Purchase return Inward and Outward	Purchases return must be returned must be subtracted from the total purchases to get net purchase	Closing Stock	It represents the value of goods at the end of the Trading Account
Direct Expenses: • Wages • Octroi Duty • Fuel, Power, Lighting, • Oil , Grease and Waste • Packing Charges	It is some of the direct expenses which occur in organisations.		

Particulars	**Amount (Rs)**	**Amount (Rs)**	**Particulars**	**Amount (Rs)**	**Amount (Rs)**
To Opening stock		XXX	By Sales	XXX	
			Less: Return Inward	XXX	XXX
To Purchases Less : Return Outward	XXX XXX	XXX	By Closing Stock		XXX
To Wages		XXX	By Gross Loss (to be transferred to P/L a/c)		XXX
To Freight		XXX	XXX		
To Carriage Inward		XXX			

To Clearing Charges		XXX			
To Packing Charges		XXX			
To Power		XXX			
To Gross Profit (to be transferred to P&L a/c)		XXX			XXX

Example

Prepare a Trading Account from the following Information of a Trader
Total Purchase made during the year 2010 Rs. 20,000.
Total Sale made during the year 2010 Rs. 25,000.

Solution

Particulars	Amount (Rs)	Particulars	Amount(Rs)
To Purchases	20,000	By Sales	25,000
To Gross Profit a/c	5,000		
	25,000		25,000

3.8 Profit and Loss Account

Profit and loss account is prepared to ascertain the net profit of the business concern for an accounting period. In the words of Prof. Carter, "Profit and loss account is an account into which all gains and losses are collected in order to ascertain the excess of gains over the losses or vice versa."

Profit and loss account starts with gross profit brought down from trading account on the credit side. All the indirect expenses are debited and all the revenue incomes are credited to the profit and loss account, and then the net profit or loss is calculated. If incomes or credit is more than the expenses or debit, the difference is the net profit. On the other hand, if the expenses or debit side is more, the difference is the net loss.

Debit side

Expenses shown on the debit side of profit and loss account are classified into two categories:

- Operating expenses: These expenses are incurred to operate the business efficiently. They are incurred in running the organisation. Operating expenses include administration, selling, distribution, finance, depreciation and maintenance expenses.
- Non-operating expenses: These expenses are not directly associated with the day today operations of the business concern. They include loss on the sale of assets, extraordinary losses, etc.

Credit side

Gross profit is the first item which appears on the credit side of profit and loss account. There are other revenue incomes also which appear on the credit side of profit and loss account. The other incomes are classified as operating incomes and non-operating incomes.

- Operating incomes**:** These incomes are incidental to business and are earned from usual business carried on by the business concern. Examples: discount received, commission earned, interest received etc.
- Non-operating incomes**:** These incomes are not related to the business carried on by the firm. Examples are profit on sale of fixed assets, refund of tax etc.

3.9 Preparation of Profit and Loss Account

The principles for preparing profit and loss account are as follows:

- Only revenue receipts should be entered.
- Only the revenue expenses together with losses should be taken into account.
- Expenses and incomes relating only to the period for which the accounts are being prepared should be considered.
- All expenses and income relating to the period concerned should be considered even if the expense has not yet been paid in cash or the income has not yet been received in cash.
- All personal expenses of the proprietor and partners must be debited to the capital or drawings accounts and must not be debited to the profit and loss account. Similarly, any income which has been earned from the private assets of the proprietor and which is received by firm must be credited to the capital or drawings account.

The following table shows the items of Profit and loss Account.

Debit		**Credit**
Items	**Description**	**Items**
Selling Expenses	Carriage Outward, Travelling Expenses, Advertising	1. Interest received 2. Rent received 3. Discount earned 4. Commissioned earned
Office Expenses	Office salary, Rent, Tax, Stationary etc	
Maintenance Expenses	Repairs, Renewals and Depreciation	
Financial Expenses:	Interest paid on loan, Discount allowed etc	

Table 3.2 Credit and debit items of profit and loss account

Particular	Amount (Rs)	Particular	Amount (Rs)
To Trading Account (Gross Loss)		By Trading Account (Gross Profit)	
To Salaries		By Commission Earned	
To Rent and Taxes		By Rent Received	
To stationary		By interest received	
To Postage Expenses		By Discount received	
To Insurance		By Net Loss (Capital Account)	
To Repairs			
To Trading Expenses			
To Office Expenses			
To Interest			
To Bank charges			
To Commission			
To Discount			
To Advertisement			
To travelling Expenses			
To Bad Expenses			
To Net Profit			
(Transferred to Capital Account)			

Table 3.3 Format of profit and loss account

Example

Prepare the Profit and Loss Account form the following Balances of ABC for the year ending 31.12.2010

Office Rent Rs.3,000	Salaries Rs.8,000
Printing Expenses Rs.2,200	Stationery Rs.2,400
Tax Insurance Rs.1,400	Discount Allowed Rs.600
Discount Received Rs.400	Travelling expenses Rs.2,600
Advertisement Rs.3,600	

Gross profit Transferred from the Trading Account Rs.25,000

Solution

Profit and Loss Account of ABC

For the Year ending 31st December 2010

Dr. Cr.

Particulars	**Amount (Rs)**	**Particulars**	**Amount (Rs)**
To Salaries	8,000	By Gross Profit (Transferred from the trading a/c)	25,000
To Office Rent	3,000	By Discount Received	400
To Stationary	2,400		
To Printing Expenses	2,200		
To Tax Insurance	1,400		
To Discount Allowed	600		
To Travelling Expenses	2,600		
To Advertising	3,600		
To Net Profit (Capital Account)	1,600		
Total	**25,400**	**Total**	**25,400**

3.10 Balance Sheet

The Balance sheet comprises of the lists of assets, liabilities and capital fund on a given date. It presents the financial position of a concern as revealed by the accounting records. It reflects the assets owned by the concern and the sources of funds used in the acquisition of those assets. In simple language, it is prepared in such a way that true financial position is revealed in a form easily readable and more rapidly understood than would be possible from a view of the detailed information contained in the accounting records prepared during the currency of the accounting period. Balance sheet may be called a 'statement of equality' in which equality is established by representing values of assets on one side and values of liabilities and owners' funds on the other side. A Balance sheet is called by different names probably due to lack of uniformity in accounting systems. Generally, the following titles are used in respect of balance sheet:

- Balance sheet or General Balance sheet
- Statement of Financial position or condition
- Statement of assets and liabilities
- Statement of assets and liabilities and owners' fund

Of the above, the title 'Balance sheet" is mostly used. The use of this title implies that data presented in it have been taken from the balances of accounts. Thus, according to Cropper, "Balance sheet is a 'Classified summary' of the ledger balances remaining after closing all revenue items into the profit and loss account." Francis defines, Balance sheet as a "screen picture of the financial position of a going business concern at a certain moment"

3.11 Classification of Assets and Liabilities

A clear and correct understanding of the basic divisions of the assets and liabilities and the meanings which they signify and the amounts which they represent is very essential for a proper perspective of financial position of a business concern. Assets and liabilities are classified under the following major headings.

3.11.1 Assets

Assets are properties of business. They are classified on the basis of their nature. Different types of assets are as under:

- Fixed assets: Fixed assets are the assets which are acquired and held permanently and used in the business with the objective of making profits. Land and building, Plant and machinery, furniture and fixtures are examples of fixed assets.
- Current assets: The assets of the business in the form of cash, debtors bank balances, bill receivable and stock are called current assets as they can be realised within an operating cycle of one year to discharge liabilities.
- Tangible assets: Tangible assets have definite physical shape or identity and existence; they can be seen, felt and have volume such as land, cash, stock etc. Thus, tangible assets can be both fixed assets and current assets.
- Intangible assets: The assets which have no physical shape and cannot be seen or felt, but have value are called intangible assets. Goodwill, patents, trademarks and licences are examples of intangible assets. They are usually classified under fixed assets.
- Fictitious assets: Fictitious assets are not real assets. Past accumulated losses or expenses which are capitalised for the time being, expenses for promotion of organisations (preliminary expenses), discount on issue of shares, debit balance of profit and loss account etc. are the examples of fictitious assets.
- Wasting assets: These assets are also called depleting assets. Assets such as mines, timber forests, quarries etc. which become exhausted in value by way of excavation of the minerals, cutting of wood etc. are known as wasting assets. Such assets are usually natural resources with physical limitations.
- Contingent assets: Contingent assets are assets, the existence, value possession of which is based on happening or otherwise specific events. For example, if a business firm has filed a suit for a particular property now in possession of other persons, the firm will get the property if the suit is decided in its favour. Till the suit is decided, it is a contingent asset.

3.11.2 Liabilities

A liability is an amount which a business firm is 'liable to pay' legally. All the amounts which are claims by outsiders on the assets of the business are known as liabilities. They are credit balances in the ledger. Liabilities are classified in to the following categories as given below.

- Owner's capital: Capital is the amount contributed by the owners of the business. In addition to initial capital introduced, proprietors may introduce additional capital and withdraw some amounts from business over a period of time. Owner's capital is also called 'net worth'. Net worth is the total fund of proprietors on a particulars date. It consists of capital, profits and interest on capital subject to reduction of drawings and interest on drawings.
- In case of limited companies, capital refers to capital subscribed by shareholders. Net worth refers to paid up equity capital plus reserves and profits, minus the losses.
- Long-term Liabilities: Liabilities repayable after a specific duration of time are called long-term liabilities. They do not become due for payment in the ordinary 'operating cycle' of business or within a short period of time. Examples are long term loans and debentures. Long term liabilities may be either secured or unsecured, though usually they are secured.
- Current liabilities: Liabilities which are repayable during the operating cycle of business, usually within a year, are called short-term liabilities or current liabilities. They are paid out of current assets or by the creation of

other current liabilities. Examples of current liabilities are trade creditors, bills payable, outstanding expenses, bank overdraft, taxes payable and dividends payable.

- Contingent liabilities: Contingent liabilities will result into liabilities only if certain events happen. Examples are: Bills discounted and endorsed which may be dishonoured, unpaid calls on investments.

Pro Forma of Balance Sheet:

Liabilities.		**Rs**	**Assets**	**Rs**
Capital	xxx		**Fixed assets**	xxx
Add: Net profit	xxx		Goodwill	xxx
Add: Interest on capital	xxx		Land & Buildings	xxx
		------	Loose tools	xxx
Less: Drawing	xxx		Furniture & fixtures	xxx
Less: Int. on drawings	xxx		Vehicles	xxx
Less: Loss if any	xxx		Patents	xxx
		------- xxx	Trade marks	xxx
Long term liabilities			Long term loans (advances)	xxx
Loan on mortgage		xxx	**Investments** **Current assets**	
Bank loan		xxx	Closing stock	xxx
Current liabilities			Sundry debtors	xxx
Sundry creditors		xxx	Bills receivable	xxx
Bills payable		xxx	Prepaid expenses	xxx
Bank overdraft		xxx	Accrued incomes	xxx
Creditors for outstanding exp.		xxx	Cash at bank	xxx
Income received in advance		xxx	Cash in hand	xxx
			Fictitious assets	
			Preliminary expenses	xxx
			Advertisement expenses	xxx
			Underwriting commission	xxx
			Discount on issue of shares	xxx
			Discount on issue of debentures	xxx
	xxx			xxx

Illustration:
From the following adjustment Trial Balance, prepare a Balance Sheet for Saravanan Traders as on 31st December 2004.

Trial Balance

	Dr. (Rs.)	Cr. (Rs.)
Capital	-	2,50,000
Cash in hand	40,000	-
Cash at bank	30,000	-
Closing stock	20,000	-
Fixed assets less depreciation (Rs.20,000)	1,80,000	-
Bills payable	21,000	-
Sundry debtors		2,000
Sundry creditors	52,000	-
Liabilities for expenses	-	25,000
Drawings	-	10,000
Investments	12,000	-
P&L A/c	15,000	-
Bank overdraft	-	70,000
-	-	13,000
-	-	-

Solution:
Saravanan Traders
Balance Sheet as on 31st December 2004

Liabilities		**Rs.**	**Assets**	**Rs.**
Capital	2,50,000		Fixed assets 2,00,000 Less: Depreciation 20,000	
				1,80,000
Less: Drawings	3,20,000		Investments	15,000
	2,000		Closing stock	20,000
		3,08,000	Sundry debtors	52,000
Bills payable		2,000	Bills receivable	21,000
Sundry creditors		25,000	Cash at bank	30,000
Liabilities for expenses		10,000	Cash in hand	40,000
Bank overdraft		13,000		
		3,58,000		3,58,000

3.12 Adjustments

On preparing the Trading account, and the Profit and loss account, adjustments are necessary when accrual basis of accounting is followed. Adjustments are usually required for the following items:

Closing Stock

This is the stock which remained unsold in the preceding accounting period.

Closing stock A/cDr.

To Trading A/c

Trading A/c

	By Closing Stock

Balance Sheet

	Closing Stock

Outstanding Expenses

Outstanding expenses refer to those expenses which have become due during the accounting period for which the final accounts have been prepared, but have not yet been paid.

Expenses A/c Dr

To Outstanding expenses A/c

Trading A/c

	By Closing Stock

Balance Sheet

	Closing Stock

Prepaid Expenses

Prepaid expenses are the expenses in which the benefits have not been fully enjoyed before the end of the accounting year. They are expenses paid in advance or unexpired expenses.

Prepaid expense A/c Dr

To Expenses A/c

P&L A/c

To Salary (+) O/s wages	

Balance Sheet

O/S wages	

Outstanding or Accrued Income

It may happen sometimes that certain items of income such as interest on investments, commission etc. are earned during the current accounting year, but have not been actually received by the end of the same year. Such incomes are known as outstanding or accrued incomes.

Accrued Income A/c Dr

To Income A/c

P&L A/c

	By interest (+) Accrued int.

Balance Sheet

	Accrued interest

Income received in advance

Sometimes a portion of income is received during the current year, but related to the future period. Such portion of the income which belongs to the next accounting period is income received in advance and is known as unexpired income.

Income A/c Dr
To Income received in advance A/c

P&L A/c

	By Rent received(-) Received in advance

Balance Sheet

Rent received in advance	

Depreciation
Depreciation is the decrease in the value of an asset due to wear and tear and passage of time, obsolescence etc. It is a business expense, even though it is not paid in cash every year. It is to be debited to Profit and Loss Account, and the amount to be deducted from the relevant asset in the Balance Sheet. If depreciation is given in the Trial Balance, it is taken only on the debit side of profit and loss account as its adjustment is over.

Depreciation A/c Dr.
To Concerned Assets A/c

P&L A/c

To Dep. On machinery	

Balance Sheet

	Machinery (-) Depreciation

Bad Debts
Any irrecoverable portion of sundry debtors is termed as bad debt. Bad debt is a loss to the business. If it is given in the Trial Balance, it should be shown on the debit side of profit and loss account. Bad debts, given in the adjustment, are to be deducted from sundry debtors in the Balance Sheet and the same is debited to the Profit and Loss Account.

Bad debts A/c Dr.
To Sundry Debtors A/c

P&L A/c

To Provision for doubtful debts	

Balance Sheet

	Debtors (-) Bad debts

Provision for doubtful debts
It is a provision created to meet any loss, if the debtors fail to pay the whole or part of the debt owed by them. The amount required for doubtful debt is kept by changing the amount to the profit and loss account.
Profit and Loss A/c Dr.
To Provision for discount on debtors A/c

P&L A/c

To Provision for doubtful debts	

Balance Sheet

	Debtors (-) Bad debts (-) Provision for double debts

Provision for discount on debtors
Sometimes the goods are sold on credit to customers in one accounting period, whereas the payment of the same is received in the next accounting period and discount is to be allowed.

Profit and Loss A/c Dr.
To Provision for discount on debtors A/c

P&L A/c

To Provision for discount on debtors	

Balance Sheet

	Debtors (-) Bad debts (-) Provision for double debts (-) Discount on debtors

Reserve for discount on creditors
Prompt payment, if made, enables a business man to receive discount. So, on the last day of accounting period if some amount is still payable to creditors, a provision should be created for such probable income and the amount should be credited to the profit and loss account of that year in which the purchases are made.

Reserve for discount on creditors A/c Dr.
To Profit and Loss A/c

P&L A/c

	By Provision for discount creditors

Balance Sheet

Creditors (-) Provision for discount on creditors	

Interest on capital
Sometimes interest is paid on the proprietor's capital. Such interest is anexpense to the business and is debited to profit and loss account.

To Capital A/c

P&L A/c

To Interest on capital	

Balance Sheet

Capital (+) Interest on Capital	

Interest on Drawings
Often, interest is charged on drawings made by the proprietor. It is a gain to the business.
Drawings A/c Dr
To Interest on drawings A/c

P&L A/c

	To Interest on drawings

Balance Sheet

Capital (+) Interest on Capital (-) Interest on drawings	

Transfer to Reserve

Reserves save a business from future losses and meet the losses without reduction in capital. The reserves are appropriation of profits and are created only in the year when there are profits.

Profit and A/c Dr
To Reserve A/c

P&L A/c

To New reserve	

Balance Sheet

Reserve (+) New reserve	

Commission on Profit

The Commission as a percentage of the net profit may be 'before' or 'after' charging such commission. In the absence of any special instruction, it is assumed that commission is allowed as a percentage of the net profit before charging such commission.

- If the commission is on the net profit before charging such commission, the formula is:
  Profit x $\frac{\text{Rate of Commission}}{100}$
- If the commission is on the net profit after charging such commission, the amount is calculated as follows:
  Commission = Profit x $\frac{\text{Rate}}{100 + \text{rate}}$

Summary

- According to the dual aspect concept, the total of debit balance must be equal to the credit balance.
- Trial balance is a statement prepared with the balances or total of debits and credits of all the accounts in the ledger to test the arithmetical accuracy of the ledger accounts.
- If the total of the debit and credit amount columns of the trial balance are equal, it is assumed that the posting to the ledger in terms of debit and credit amounts is accurate.
- The agreement of a trial balance ensures arithmetical accuracy only.
- A trial balance is prepared on a specified date.
- The trial balance can be prepared only in those concerns, where double entry system of book- keeping is adopted.
- Trial balance is prepared to check the arithmetical accuracy of accounts.
- When two or more errors are committed in such a way that the net effect of these errors on the debits and credits of accounts is nil, such errors are called compensating errors.
- 'Final Statements' generally refer to the two statements prepared by a business concern at the end of every accounting year.
- Direct wages and direct expenses are debited to manufacturing account.
- Total raw materials consumed, direct wages, direct expenses and factory expenses is the total manufacturing cost.
- Trading account is a ledger account
- Trading account starts with opening stock on the debit side.
- The total value of goods purchased after deducting purchase returns is debited to trading account.
- Closing stock is the value of goods remaining at the end of the accounting period.
- Profit and loss account is prepared to ascertain the net profit of the business concern for an accounting period.
- Gross profit is the first item appearing on the credit side of profit and loss account.
- Balance sheet is a 'Classified summary' of the ledger balances remaining after closing all revenue items into the profit and loss account.
- Fixed assets are the assets which are acquired and held permanently and used in the business with the objective of making profits.
- The assets which have no physical shape and cannot be seen or felt, but have value are called intangible assets.
- Liabilities which are repayable during the operating cycle of business, usually within a year, are called short-term liabilities or current liabilities.
- Prepaid expenses are the expenses in which the benefits have not been fully enjoyed before the end of the accounting year.
- Depreciation is the decreased in the value of an asset due to wear and tear, passage of time, obsolescence etc.
- The Commission as a percentage of the net profit may be 'before' or 'after' charging such commission.

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Self Assessment

1. _____ is a statement prepared with the balances or total of debits and credits of all the accounts in the ledger to test the arithmetical accuracy of the ledger accounts.
   a. Profit loss account
   b. Trading account
   c. Balance sheet
   d. Trial balance

2. Trial balance is prepared to check the arithmetical accuracy of _____.
   a. errors
   b. accounts
   c. documents
   d. balance

3. Which of the following is not one of the stages of error?
   a. Recording stage
   b. Balancing stage
   c. Posting stage
   d. Partial stage

4. Which of the following is not included in the recording stage?
   a. Error of omission
   b. Error of commission
   c. Error of principle
   d. Posting stage

5. Which of the following is also known as compensating error?
   a. Offsetting error
   b. Posting on wrong side
   c. Posting of wrong amount
   d. Balancing Stage

6. _____ generally refer to the two statements prepared by a business concern at the end of every accounting year.
   a. Trial balance
   b. Capital
   c. Final statements
   d. Manufacturing

7. _____ is prepared for an accounting period to find the trading results or gross margin of the business.
   a. Trading account
   b. Managerial account
   c. Trial balance
   d. Profit and loss account

8. _____ is the value of goods remaining at the end of the accounting period.
   a. Sales
   b. Credit
   c. Debit
   d. Closing stock

9. Match the following

1. Gross profit	A. Expenses are incurred to operate the business efficiently
2. Balance sheet	B. Is the first item appearing on the credit side of profit and loss account
3. Liability	C. Is an amount which a business firm is 'liable to pay' legally
4. Operating expenses	D. Comprises of lists of assets, liabilities and capital fund on a given date

   a. 1-B, 2-D, 3- C; 4-A
   b. 1-A, 2-C, 3- D; 4-B
   c. 1-C, 2-A, 3- B; 4-D
   d. 1-B, 2-D, 3- C; 4-A

10. Liabilities which are repayable during the operating cycle of business, usually within a year, are called _____.
   a. Long term liabilities
   b. Current liabilities
   c. Contingent liabilities
   d. Ledger liabilities

Chapter IV

Management Accounting

Aim

The aim of this chapter is to:

- introduce management accounting
- explain the importance of accounting
- elucidate the need for management accounting

Objectives

The objectives of this chapter are to:

- explain the evolution of management accounting
- define the process of accounting
- enlist the benefits of management accounting

Learning outcome

At the end of this chapter, you will be able to:

- define funds flow
- understand the importance of management accounting
- identify various ratio analysis

4.1 Introduction

Management accounting can be viewed as Management-oriented Accounting. Basically, it is the study of managerial aspect of financial accounting, "accounting in relation to management function". It shows how the accounting function can be re-oriented so as to fit it within the framework of management activity. The primary task of management accounting is, therefore, to redesign the entire accounting system so that it may serve the operational needs of the firm. It furnishes definite accounting information, be it past, present or future, which may be used as a basis for management action. The financial data are so devised and systematically developed that they become a unique tool for management decision.

The term "Management Accounting", observe, Broad and Carmichael, covers all those services by which the accounting department can assist the top management and other departments in the formation of policy, control of execution and appreciation of effectiveness. This definition points out that management is entrusted with the primary task of planning, execution and control of the operating activities of an enterprise. A decision based on this data is usually correct and the risk of making a mistake is minimal.

The position of the management in respect of its functions can be compared to that of an army general who wants to wage a successful battle. A general can hardly fight successfully until and unless he gets full information about the surrounding situation and the extent of effectiveness of each of his battalions, and if possible, even the enemy's intentions. Like a general, a successful management too strives to outstrip other competitors in the field by streamlining its operating efficiency. It needs a thorough knowledge of the situation and the circumstances in which the firm operates. Such knowledge can only be gained through the processed financial data rendered by the accounting department on the basis of which it can take policy decision regarding execution, control, etc. It is here that the role of management accounting comes in. It supplies all sorts of accounting information in the form of statements which may be needed by the management. Therefore, management accounting is concerned with the accumulation, classification and interpretation of information that assists individual executives to fulfil organisational objectives.

An analysis of the above definition shows that management needs information for better decision-making and effectiveness. The collection and presentation of such information come within the area of management accounting. Thus, accounting information should be recorded and presented in the form of reports at frequent intervals, as the management may want. These reports present a systematic review of past events as well as an analytical survey of current economic trends. Such reports are mainly suggestive in approach and the data contained in them are quite up to date. The accounting data so supplied, thus, provide the informational basis of action. The quality of information so supplied depends upon its usefulness to management in decision-making. The usual approach is that, first of all, a thorough analysis of the whole managerial process is made, then the information required for each area is explored, and finally, all the information, after analysis in terms of alternatives, is taken into consideration before arriving at a management decision. It is to be understood here that the accounting information has no end in itself; it is a means to an end. As its basic idea is to serve the management, its form and frequency are all decided by managerial needs. Therefore, accounting aids the management by providing quantitative information on the economic well being of the enterprise. It would be appropriate if we called management accounting an Enterprise Economics. Its scope extends to the use of certain modern sophisticated managerial techniques in analysing and interpreting operative data and to the establishment of a communication network for financial reporting at all managerial levels of an organisation.

4.2 Nature of Management Accounting

The term management accounting is composed of 'management' and 'accounting'. The word 'management' here does not signify only the top management, but the entire personnel charged with the authority and responsibility of operating an enterprise. The task of management accounting involves furnishing accounting information to the management, which may base its decisions on it. It is through management accounting that the management gets the tools for an analysis of its administrative action and can lay suitable stress on the possible alternatives in terms of costs, prices and profits, etc., but it should be understood that the accounting information supplied to management is not the sole basis for managerial decisions. Along with the accounting information, management takes into consideration or weighs other factors concerning actual execution. For reaching a final decision, management has to apply its common sense, foresight, knowledge and experience of operating an enterprise, in addition to the information that is already has.

The word 'accounting' used in this phrase should not lead us to believe that it is restricted to a mere record of business transactions, i.e., book keeping only. It has indeed a 'macro-economic approach'. As it draws its raw material from several other disciplines like costing, statistics, mathematics, financial accounting, etc., it can be called an inter-disciplinary subject, the scope of which is not demarcated. Other fields of study, which can be covered by management accounting, are political science, sociology, psychology, management, economics, statistics, law, etc. A knowledge of political science helps to understand authority relationship and responsibility identification in an organisation. A study of sociology helps to understand the behaviour of man in groups. Psychology enables us to know the mental make-up of employers and employees.

A knowledge of these subjects helps to increase motivation, and to control the actions of the people who are ultimately responsible for costs. This builds a better employer-employee relationship and a sound morale. The subject of management reveals the processes involved in the art of managing, knowledge of economics assists in the determination of optimum output in the forecasting of sales and production, etc., and also makes it possible to analyse management action in terms of cost revenues, profits, growth, etc. It is with the help of statistics that this information is presented to the management in a form that can be assimilated. The subject of management accounting also encompasses the subject of law, knowledge of which is necessary to find out if the management action is ultra-vires or not. It is, therefore, a wide and diverse subject. Management accounting has no set principles such as the double entry system of bookkeeping. In place of generally accepted accounting principles, the philosophy of cost benefit analysis is the core guide of this discipline. It says that no accounting system is good or bad, but is can be considered desirable as long as it brings incremental benefits in excess of its incremental costs. Applying management accounting principles to financial matters can arrive at no single perfect solution. It is, therefore, an inexact science, which uses its own conventions rather than standardised principles. The facts to be studied here can be interpreted in different ways and the precision of the inferences depends upon the skill, judgment and common sense of different management accountants. It occupies a middle position between a fully matured and an infant subject.

Management accounting is highly sensitive to management needs. However, it assists the management and does not replace it. It represents a service phase of management rather than a service to management from management accountant. It is rather highly personalised service. Finally, it can be said that the management accounting serves as a management information system and so enables the management to manage better.

4.3 Functions of Management Accounting

The basic function of management accounting is to assist the management in performing its functions effectively. The functions of the management are planning, organising, directing and controlling. Management accounting helps in the performance of each of these functions in the following ways:

- Provides data: Management accounting serves as a vital source of data for management planning. The accounts and documents are a repository of a vast quantity of data about the past progress of the enterprise, which are a must for making forecasts for the future.
- Modifies data: The accounting data required for managerial decisions is properly compiled and classified. For example, purchase figures for different months may be classified to know total purchases made during each period product-wise, supplier-wise and territory-wise.
- Analyses and interprets data: The accounting data is analysed meaningfully for effective planning and decision-making. For this purpose the data is presented in a comparative form. Ratios are calculated and likely trends are projected.
- Serves as a means of communicating: Management accounting provides a means of communicating management plans upward, downward and outward through the organisation. Initially, it means identifying the feasibility and consistency of the various segments of the plan. At later stages, it keeps all the parties informed about the plans that have been agreed upon and their roles in these plans.
- Facilitates control: Management accounting helps in translating given objectives and strategy into specified goals for attainment by a specified time and secures effective accomplishment of these goals in an efficient manner. All this is made possible through budgetary control and standard costing which is an integral part of management accounting.

- Uses qualitative information: Management accounting does not restrict itself to financial data for helping the management in decision making, but also uses such information which may not be capable of being measured in monetary terms. Such information may be collected from special surveys, statistical compilations, engineering records, etc.

4.4 Scope of Management Accounting

Management accounting is concerned with presentation of accounting information in the most useful way for the management. Its scope is, therefore, quite vast and includes within its fold almost all aspects of business operations. However, the following areas can rightly be identified as falling within the ambit of management accounting:

- Financial accounting: Management accounting is mainly concerned with the rearrangement of the information provided by financial accounting. Hence, management cannot obtain full control and coordination of operations without a properly designed financial accounting system.
- Cost accounting: Standard costing, marginal costing, opportunity cost analysis, differential costing and other cost techniques play a useful role in operation and control of the business undertaking.
- Revaluation accounting: This is concerned with ensuring that capital is maintained intact in real terms and profit is calculated with this fact in mind.
- Budgetary control: This includes framing of budgets, comparison of actual performance with the budgeted performance, computation of variances etc.
- Inventory control: It includes control over the inventory from the time it is acquired till its final disposal.
- Statistical methods: Graphs, charts, pictorial presentation, index numbers and other statistical methods makes the information impressive and intelligible.
- Interim reporting: This includes preparation of monthly, quarterly, half-yearly income statements and the related reports, cash flow and funds flow statements, scrap reports, etc.
- Taxation: This includes computation of income in accordance with the tax laws, filing of returns and making tax payments.
- Office Services: This includes maintenance of proper data processing and other office management services, reporting on the best use of mechanical and electronic devices.
- Internal Audit: Development of a suitable internal audit system for internal control.

4.5 Financial Analysis and Planning

Financial analysis and planning is carried out for the purpose of obtaining material and relevant information necessary for ascertaining the financial strengths and weaknesses of an enterprise and is necessary to analyse the data depicted in the financial statements. The main tools are Ratio Analysis, Cash Flows and Fund Flow Analysis.

Management accountants need to be able to produce accurate analysis, correct forecasts and a detached and professional overview to a company's performance. These contribute to the future success of a business.

Other tools available to a management accountant include:

- Cash flow forecasts which look at the likely future flows of costs and revenues. The business uses these to plan the expenditure and income.
- Budgets, which are financial plans for the future. They help the business to see, where it will incur costs and where the revenues will come from. They are particularly important in helping to co-ordinate the different parts or activities of a business.
- Variances which show the difference between what was predicted to happen (in a budget) and what actually happened. The reasons for these differences can then be analysed to show why the variance occurred. Management accountants can, then, see how the business can be built on positive variances or how to avoid negative ones in future.
- Investment appraisal helps to decide whether a particular investment is worthwhile or not. It looks at the costs of investing, for example, in a new factory or processes and at the likely financial returns.

4.6 Ratio Analysis

A ratio is one variable measured in terms of another, for example, how many girls are there in a class compared to the number of boys. Ratio analysis is one of the tools in the strategic decision making process. Management accountants use ratios along with other internal business data and publicly available information to assess aspects of a company's performance.

The main ratios used in management accounting are:

- Efficiency or activity ratios, including liquidity: This shows whether the business is able to pay its debts. They look at whether the assets of the company (buildings, land equipment) could repay any debts.
- Gearing: This shows the long-term financial position of the business. It can show the balance of funding in a business, i.e., how much money is from loans (on which it needs to pay interest) and how much is from the shareholder funds (on which it needs to pay a dividend to shareholders). More money from loans carries more cost and therefore means more risk.
- Profitability or performance ratios: This shows how well a business is doing. They relate to the business objectives, which might be to make profit or obtain a return on investment, or collects its debts quickly.

Ratio analysis is based on the fact that single accounting figure by itself may not communicate any meaningful information, but when expressed as a relative to some other figure, it may definitely provide some significant information. Ratio analysis is comparison of different numbers from the balance sheet, incoming statement and cash flow statement against the figure of previous years, other companies, the industry, or even the economy in general for the purpose of financial analysis.

To evaluate the financial performance of a company, the financial ratios are used as a very sophisticated tool. However, the type of analysis varies according to the specific interests of the parties involved. Trade creditors are interested primarily in the liquidity of a firm. Their claims are short term, and the ability of a firm to pay these claims is best judged by means of a thorough analysis of its liquidity. The claims of bondholders, on the other hand, are long term. Accordingly, they are more interested in the cash-flow ability of the company to service debt over the long run. The bondholder may evaluate this ability by analysing the capital structure of the firm, the major sources and uses of funds, its profitability over time, and projections of future profitability. Investors in a company's common stock are concerned principally with the present and expected future earnings and the stability of these earnings about a trend, as well as their covariance with the earnings of other companies.

As a result, investors might concentrate their analysis on a company's profitability. They would be concerned with its financial condition, as it affects the ability of the company to pay dividends and to avoid bankruptcy. In order to bargain more effectively for outside funds, the management of a firm should be interested in all the aspects of financial analysis that the outside suppliers of capital use in evaluating the firm. Management also employs financial analysis for purposes of internal control. In particular, it is concerned with profitability on investment in the various assets of the company and in the efficiency of asset management.

4.6.1 Precautions in using Ratio Analysis

The analyst should avoid using rules of thumb indiscriminately for all industries. For example, the criterion that all companies should have at least a 2-to-1 current ratio is inappropriate. The analysis must be in relation to the type of business in which the firm is engaged and to the firm itself. The true test of liquidity is whether a company has the ability to pay its bills on time or not. Many sound companies, including electric utilities, have this ability despite current ratios substantially below 2-to-1. It depends on the nature of the business. One can make a realistic judgment only by comparing the financial ratios of one firm with those of similar firms.

Similarly, analysis of the deviation from the norm should be based on some knowledge of the distribution of ratios for the companies involved. If the company being studied has a current ratio of 1.4 and the industry norm is 1.8, one would like to know the proportion of companies whose ratios are below 1.4. If it is only 2 per cent, we are likely to be much more concerned than if it is 25 per cent. Therefore, we need information on the dispersion of the distribution to judge the significance of the deviation of a financial ratio for a particular company from the industry norm.

Comparisons with the industry must be approached with caution. It may be that the financial condition and performance of the entire industry is less than satisfactory, and if a company is being above average, it may not be sufficient. The company may have a number of problems on an absolute basis and should not take refuge in a favourable comparison with the industry. The industry ratios should not be treated as target asset and performance norms. Rather, they provide general guidelines for benchmark purposes; it is like a set of firms displaying 'best practices' that should be developed. In addition, the analyst should realise that the various companies within an industry grouping may not be homogeneous. Companies with multiple product lines often defy precise industry categorisation. They may be placed in the most 'appropriate' industry grouping, but comparison with other companies in that industry may not be consistent. Also, companies in an industry may differ substantially in size.

Since reported financial data and the ratios computed from these data are numerical, there is a tendency to regard them as precise portrayals of a firm's true financial status. Accounting data such as depreciation, reserve for bad debts, and other reserves are estimates at best and may not reflect economic depreciation, bad debts, and other losses. As far as possible, accounting data from different companies should be standardised.

4.6.2 Types of Ratio Analysis

The ratios can be classified into following four broad categories:

Liquidity ratio

Liquidity or short term solvency means ability of the business to pay its short term liabilities.

- Current Ratios: The current ratio is one of the best known measures of financial strength.

  Current Assets/Current Liabilities

- Quick Ratios: The quick ratio is sometimes called the "acid test" ratio and is one of the best measures of liquidity. It is a more conservative measure than current ratio.

  Quick Assets/Current Liabilities

- Cash Ratio/Absolute Liquidity Ratio: The cash ratio measures the absolute liquidity of the business. This ratio considers only the absolute liquidity available with the firm.

$$\frac{\text{Cash + Marketable Securities}}{\text{Current Liabilities}} = \text{Cash Ratio}$$

- Basic Defence Interval: This ratio helps in determining the number of days the company can cover its cash expenses, without the aid of additional financing.

$$\text{Basic Defence Interval} = \frac{\text{(Cash + Receivables + Marketable Securities)}}{\text{(Operating Expenses + Interest + Income Taxes)/ 365}}$$

- Networking Capital Ratio: It helps to determine company's ability to withstand financial crises over time.

  Net Working Capital Ratio = Current Assets - Current Liabilities

  (Excluding short term bank borrowing)

Capital structure/leverage ratios

The capital structure/leverage ratios can be defined as those financial ratios which measure the long term stability and structure of the firm. These ratios provide an insight into the financing techniques used by a business and focus, as a consequence, on a long term solvency position.

- Equity Ratios: This ratio indicates proportion of owners fund to total fund invested in the business.

$$\text{Equity Ratio} = \frac{\text{Shareholders' Equity}}{\text{Total Capital Employed}}$$

- Debt Ratio: This ratio is used to analyse the long-term solvency of a firm.

$$\text{Debt Ratio} = \frac{\text{Total Debt}}{\text{Capital Employed}}$$

- Debt to Equity Ratio: Debt equity ratio is the indicator of leverage.

$$\text{Debt to Equity Ratio} = \frac{\text{Debt Preferred Long Term}}{\text{Shareholders' Equity}}$$

Coverage ratios

The coverage ratios measure the firm's ability to service the fixed liabilities.

- Debt Service Coverage Ratio: Lenders are interested in debt service coverage to judge the firm's ability to pay off current interest and installments.

$$\text{Debt Service Coverage Ratio} = \frac{\text{Earnings available for debt service}}{\text{Interest Instalments}}$$

- Interest Coverage Ratio: Also known as "times interest earned ratio" indicates the firm's ability to meet interest (and other fixed-charges) obligations.

$$\text{Interest Coverage Ratio} = \frac{\text{EBIT}}{\text{Interest}}$$

- Preference Dividend Coverage Ratio: This ratio measures the ability of a firm to pay dividend on preference shares which carry a stated rate of return.

$$\text{Preference Dividend Coverage Ratio} = \frac{\text{EAT}}{\text{Preference dividend liability}}$$

- Capital Gearing Ratio: In addition to debt-equity ratio, sometimes capital gearing ratio is also calculated to show the proportion of fixed interest (dividend) bearing capital to funds belonging to equity shareholders.

$$\text{Capital Gearing Ratio} = \frac{\text{Capital Debentures I}}{\text{Capital Reserves \& Su}}$$

Activity ratios

These ratios are employed to evaluate the efficiency with which the firm manages and utilises its assets.

- Capital Turnover Ratio: This ratio indicates the firm's ability of generating sales per rupee of long term investment.

$$\text{Capital Turnover Ratio} = \frac{\text{Sales}}{\text{Capital Employed}}$$

- Fixed Assets Turnover Ratio: A high fixed assets turnover ratio indicates efficient utilisation of fixed assets in generating sales.

$$\text{Fixed Assets Turnover Ratio} = \frac{\text{Sales}}{\text{Capital Assets}}$$

- Working Capital Turnover:

$$\text{Working Capital Turnover} = \frac{\text{Sales}}{\text{Working Capital}}$$

Working Capital Turnover is further segregated into Inventory Turnover, Debtors Turnover, and Creditors Turnover.

- Inventory Turnover Ratio: This ratio also known as stock turnover ratio establishes the relationship between the cost of goods sold during the year and average inventory held during the year.

$$\text{Inventory Turnover Ratio} = \frac{\text{Sales}}{\text{Average Inventory}}$$

$$\text{Average Inventory} = \frac{\text{Opening Stock Closing Stock}}{2}$$

- Debtor's Turnover Ratio: The debtor's turnover ratio throws light on the collection and credit policies of the firm.

$$\frac{\text{Sales}}{\text{Average Accounts Receivable}}$$

- Average Accounts Receivable Creditor's Turnover Ratio: This ratio shows the velocity of debt payment by the firm. It is calculated as follows:

$$\text{Creditors Turnover Ratio} = \frac{\text{Annual Net Credit Purchases}}{\text{Average Accounts Payable}}$$

Profitability ratios

The profitability ratios measure the profitability or the operational efficiency of the firm. These ratios reflect the final results of business operations.

- Return on Equity (ROE): Return on Equity measures the profitability of equity funds invested in the firm. This ratio reveals how profitability of the owners' funds have been utilised by the firm.

$$\text{ROE} = \frac{\text{Profit after taxes}}{\text{Net worth}}$$

- Earnings per Share: The profitability of a firm from the point of view of ordinary shareholders can be measured in terms of number of equity shares. This is known as Earnings per share.

$$\text{Earnings per share (EPS)} = \frac{\text{Net profit available to equity holders}}{\text{Number of ordinary shares outstanding}}$$

- Dividend per Share: Dividend per share ratio indicates the amount of profit distributed to shareholders per share.

$$\text{Dividend per share} = \frac{\text{Total profits distributed to equity share holders}}{\text{Number of equity shares}}$$

- Price Earning Ratio: The price earning ratio indicates the expectation of equity investors about the earnings of the firm. It relates earnings to market price and is generally taken as a summary measure of growth potential of an investment, risk characteristics, shareholders orientation, corporate image and degree of liquidity.

$$\text{PE Ratio} = \frac{\text{Market price per share}}{\text{Earnings per share}}$$

- Return on Capital Employed/Return on Investment: It is the percentage of return on funds invested in the business by its owners.

$$\text{Return on capital employed} = \frac{\text{Return}}{\text{Capital employed}} \times 100$$

- Return on Assets (ROA): This ratio measures the profitability of the firm in terms of assets employed in the firm.

$$\text{ROA} = \frac{\text{Net profit after taxes}}{\text{Average total assets}}$$

- Gross Profit Ratio: This ratio is used to compare departmental profitability or product profitability.

$$\text{Gross Profit Ratio} = \frac{\text{Gross profit}}{\text{Sales}} \times 100$$

- Operating Profit Ratio:

$$\text{Operating Profit Ratio} = \frac{\text{Operating Profit}}{\text{Sales}} \times 100$$

- Net Profit Ratio: It measures overall profitability of the business.

$$\text{Net Profit Ratio} = \frac{\text{Net Profit}}{\text{Sales}} \times 100$$

- Yield: This ratio indicates return on investment; this may be on average investment or closing investment. Dividend (%) indicates return on paid up value of shares. But yield (%) is the indicator of true return in which share capital is taken at its market value.

$$\text{Yield} = \frac{\text{Dividend}}{\text{Average Share Price}} \times 100$$

- Market Value/Book Value per Share: This ratio indicates market response of the shareholders' investment.

$$\frac{\text{Market value per share}}{\text{Book value per share}} = \frac{\text{Average Share Price}}{\text{Number of Equity Shares}}$$

4.6.3 Importance of Ratio Analysis

The importance of ratio analysis lies in the fact that it presents the facts on a comparative basis and enables drawing of inferences regarding the performance of a firm. It is relevant in assessing the performance of a firm in respect to the following aspects:

- Liquidity position
- Long-term solvency
- Operating efficiency
- Overall profitability
- Inter-firm comparison
- Financial ratios for supporting budgeting

4.7 Cash Flow Statement

Cash flow statement is a statement which discloses the changes in cash position between the periods. Along with changes in the cash position, the cash flow statement also outlines the reasons for such inflows or outflows of cash which in turn helps to analyse the functioning of a business.

Classification of cash flow

The cash flow statement should report cash flows during the period classified into following categories:

- Operating activities: These are the principal revenue-producing activities of the enterprise and other activities that are not investing or financing activities.

- Investing activities: These activities relate to the acquisition and disposal of long-term assets and other investments which are not included in cash equivalents. Cash equivalents are short term highly liquid investments that are readily convertible into known amounts of cash and which are subject to an insignificant risk of changes in value.
- Financing activities: These are activities that result in changes in the size and composition of the owners' capital (including preference share capital in the case of a company) and borrowings of the enterprise.

Procedure in preparation of cash flow statement

- Calculation of net increase or decrease in cash and cash equivalents accounts: The difference between cash and cash equivalents for the period may be computed by comparing these accounts given in the comparative balance sheets. The results will be cash receipts and payments during the period are responsible for the increase or decrease in cash and cash equivalent items.
- Calculation of the net cash provided or used by operating activities: It is by the analysis of Profit and Loss Account, Comparative Balance Sheet and selected additional information.
- Calculation of the net cash provided or used by investing and financing activities: All other changes in the Balance sheet items must be analysed taking into account the additional information, and effect on cash may be grouped under the investing and financing activities.
- Final preparation of a cash flow statement: It may be prepared by classifying all cash inflows and outflows in terms of operating, investing and financing activities. The net cash flow provided or used in each of these three activities may be highlighted. Ensure that the aggregate of net cash flows from operating, investing and financing activities is equal to net increase or decrease in cash and cash equivalents.

Reporting of cash flow from operating activities

There are two methods of converting net profit into net cash flows from operating activities:

- Direct method: Actual cash receipts (for a period) from operating revenues and actual cash payments (for a period) for operating expenses are arranged and presented in the cash flow statement. The difference between cash receipts and cash payments is the net cash flow from operating activities.
- Indirect method: In this method the net profit (loss) is used as the base and then adjusted for items that affected net profit, but not cash.

4.8 Funds Flow Statement

It ascertains the changes in financial position of a firm between the accounting periods. It analyses the reasons for change in financial position between the balance sheets. It shows the inflow and outflow of funds, i.e., sources and application of funds during a particular period.

Sources of funds

The sources of funds are:

- Long term funds raised by issue of shares, debentures or sale of fixed assets
- Fund generated from operations which may be taken as a gross before payment of dividend and taxes or net after payment of dividend and taxes.

Applications of funds

The applications of funds are:

- Investment in Fixed Assets
- Repayment of Capital

4.8.1 Funds Flow Statement vs. Cash Flow Statement

The following table gives the difference between funds flow statements and cash flow statements:

Cash flow statement	Fund flow statement
It ascertains the changes in balance of cash in hand and in bank.	It ascertains the changes in financial position between the accounting periods.
It analyses the reasons for changes in balance of cash in hand and bank.	It analyses the reasons for change in financial position between the balance sheets.
It shows the inflows and outflows of cash.	It reveals the sources and application of funds.
It is an important tool for short term analysis.	It helps to test whether working capital has been effectively used or not.

Summary

- Management Accounting is the study of managerial aspect of financial accounting, "accounting in relation to management function".
- The primary task of management accounting is, therefore, to redesign the entire accounting system so that it may serve the operational needs of the firm.
- Management is entrusted with the primary task of planning, execution and control of the operating activities of an enterprise.
- The word 'accounting' used in this phrase should not lead us to believe that it is restricted to a mere record of business transactions, i.e., book keeping only. It has indeed a 'macro-economic approach'.
- Applying management accounting principles to financial matters can arrive at no single perfect solution. It is, therefore, an inexact science, which uses its own conventions rather than standardised principles.
- Management accounting is concerned with presentation of accounting information in the most useful way for the management.
- Financial analysis and planning is carried out for the purpose of obtaining material and relevant information necessary for ascertaining the financial strengths and weaknesses of an enterprise and is necessary to analyse the data depicted in the financial statements.
- Ratio analysis is based on the fact that single accounting figure by itself may not communicate any meaningful information, but when expressed as a relative to some other figure, it may definitely provide some significant information.
- Liquidity or short term solvency means ability of the business to pay its short term liabilities.
- Cash flow statement is a statement which discloses the changes in cash position between the periods.
- Fund flow statement ascertains the changes in financial position of a firm between the accounting periods.
- The importance of ratio analysis lies in the fact that it presents the facts on a comparative basis and enables drawing of inferences regarding the performance of a firm.

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Self Assessment

1. _____ is entrusted with the primary task of planning, execution and control of the operating activities of an enterprise.
   a. Management
   b. Government
   c. Organisation
   d. Public

2. _____ flow statement is a statement which discloses the changes in cash position between the periods.
   a. Fund
   b. Cash
   c. Library
   d. Ratio

3. _____ or short term solvency means ability of the business to pay its short term liabilities.
   a. Liquidity
   b. Fund
   c. Cash
   d. Yield

4. The _____ earning ratio indicates the expectation of equity investors about the earnings of the firm.
   a. cash
   b. fund
   c. price
   d. ratio

5. Fund flow statements ascertain the changes in _____ position between the accounting periods.
   a. commercial
   b. financial
   c. management
   d. organisational

6. Which of the following statements is true?
   a. Liquidity or long term solvency means ability of the business to pay its short term liabilities.
   b. Management is not entrusted with the primary task of planning, execution and control of the operating activities of an enterprise.
   c. Fund flow statement is an important tool for long term analysis.
   d. Cash flow statement is a statement which discloses the changes in cash position between the periods.

7. Which of the following statements is false?
   a. Management Accounting is the study of managerial aspect of financial accounting, "accounting in relation to management function".
   b. Fund flow statement ascertains the changes in financial position of a firm between the accounting periods.
   c. Cash flow statement analyses the reasons for changes in balance of cash in hand and bank.
   d. The capital structure/leverage ratios can be defined as those financial ratios which measure the long term stability and structure of the firm.

8. _____ ratio also known as stock turnover ratio establishes the relationship between the cost of goods sold during the year and average inventory held during the year.
   a. Debtor's turnover
   b. Capital turnover
   c. Working turnover
   d. Inventory turnover

9. _____ ratio is used to compare departmental profitability or product profitability.
   a. Gross
   b. Operational
   c. ROA
   d. Net profit

10. The _____ task of management accounting is, therefore, to redesign the entire accounting system so that it may serve the operational needs of the firm.
   a. primary
   b. secondary
   c. operational
   d. inventory

Chapter V

Cost Accounting

Aim

The aim of this chapter is to:

- introduce cost accounting
- explain the importance of accounting
- elucidate the need for cost accounting

Objectives

The objectives of this chapter are to:

- examine the evolution of cost sheet
- explain the process of accounting
- enlist the benefits of cost accounting

Learning outcome

At the end of this chapter, you will be able to:

- define nature of cost accounting
- understand the importance of cost accounting
- identify the objectives of cost accounting

5.1 Introduction

Cost Accounting is one of the important disciplines of accountancy to give proper information required to the management for effectively discharging its functions such as planning, organising, controlling, directing, co-ordinating and decision making. In this regard, Financial Accounting is concerned with record keeping directed towards the preparation of Profit and Loss Account and Balance Sheet. It provides information about the enterprise in a general way. Accordingly, the Financial Accounts are prepared as per the requirement of the Companies Act and Income Tax Act. The main purpose of financial accounting is to ascertain profit or loss of a concern as a whole for a particular period.

Thus, financial accounting does not serve as the needs of management for effective control, determination of prices, making effective plan for future operations and formulating various policy decisions. To overcome the limitations of the financial accounting, and to provide to the needs of management for detailed information about cost of a product or a unit of services, gave birth to the concept of cost accounting. Every business firm is expected to make profit in the long run and keep costs within its control. Recently, the Companies Act made the keeping of cost records obligatory in some manufacturing companies. In essence, therefore, Cost Accounting is now widely used by large manufacturing and non-manufacturing operations.

It is, thus, a method of accounting in which all costs incurred in carrying out an activity or accomplishing a purpose are collected, classified, and recorded. This data is then summarised and analysed to arrive at a selling price, or to determine, where savings are possible. In contrast to financial accounting (which considers money as the measure of economic performance) cost accounting considers money as the economic factor of production.

5.2 Features of Cost Accounting

The terminology of cost accountancy published by the Institute of Cost and Management Accountants, London defines cost accountancy as "the application of costing and cost accounting principles, methods and techniques to the science, art and practice of cost control and the ascertainment of profitability. It includes the presentation of information derived therefrom for the managerial decision-making."
On analysis of the above definition, the following features of cost accountancy become evident:

- "Cost accountancy" is used in the broadest sense when compared to "cost accounting" and "costing". This is so because cost accountancy is concerned with the formulation of principles, methods and techniques to be applied for ascertaining cost and profit.
- Having ascertained 'cost' and 'profit', cost accountancy is concerned with presentation of information to the management. To enable the management to carry out its functions, reports must be promptly made available at the right time, to the right person and in a proper form.
- The information so provided is to serve the purpose of managerial decision-making such as introducing a new line of product, replacement of manual labour by machines, to make or to buy decisions, etc.

5.3 Need for Cost Accounting

The need for cost accounting arises owing to the following:
To overcome the limitations of financial accounts
Financial accounting records in an overall manner the results of the operations of a business, using conventional double entry book-keeping techniques. It suffers from the following limitations:

- It provides only past data: Financial accounts provide out of date information to management. Nevertheless, the management is interested in current data and not past data as it does not serve any purpose to it. Therefore, it has been rightly pointed out that financial accounts provide only a post-mortem analysis of past activities.
- It reveals only overall result of the business: Financial accounts do not provide data for each and every product, process, department or operation separately. Instead it provides the financial information in a summary form for the entire organisation as a whole.
- It is static in nature: Modern business is dynamic, but not static. Financial accounts do not incorporate the changes that take place within the business.

- It fails to take into account the impact of price level change: In the modern inflationary conditions, the price level has significant impact over financial statement. Under financial accounts, assets are shown at the actual or historical cost. Consequently depreciation is also charged on actual or historical cost. This under charging of depreciation will distort the profit figure.
- Possibility of manipulation of financial accounts: Very often financial accounts are manipulated at the whims and fancies of management so as to project better image in the minds of prospective investors. The chief forms of manipulating the financial accounts assume the form of over or under valuation of inventory, excessive or inadequate provision for depreciation, creation of secret reserves, etc.
- It fails to exercise control over resources: Financial accounts fail to exercise control over materials, labour and other expenses incurred in a business enterprise. As a result, avoidable wastages and losses go unchecked under this system of accounts.
- It fails to provide adequate data for price fixation: Financial accounts fail to provide adequate cost data on the basis of which selling price is fixed. In the absence of fixation of prices in advance, it is not possible to supply quotations to the prospective customers. To that extent the income from such sales diminishes.
- It fails to provide adequate data for management in carrying out its functions: Management of every organisation relies heavily on adequate cost data for formulating policies and in decision-making process. However, financial accounts fail to provide such useful cost data to management.
- It does not provide a basis for cost comparison: Financial accounts do not help in cost comparison over a period of time or between jobs or operations. Thus, a basis for judging the efficiency of a year with past year or worthfulness of two different jobs or operations cannot be appraised.
- It does not make use of control techniques: Financial accounts fail to make use of certain important cost control techniques such as budgetary control and standard costing. Thus, financial accounts do not facilitate measuring the efficiency of the business with the help of control techniques.
- It fails to ascertain break-even point: Financial accounting does not help in ascertaining the break-even point, i.e., the sale or output, where the revenue equals the cost. Hence, the point of no-profit-no-loss cannot be made out under financial accounts.

To ensure optimum utilisation of resources

In today's business world, the resources available are very scarce. Hence, every business unit must strive hard to obtain maximum output with the available input. In order to ensure the optimum utilisation of scarce resources, the value of input is measured against the value of output. This implies matching cost per unit of production against the value of output or selling price. Then again financial accounts do not provide the information relating to cost per unit of production. Hence, the need for cost accounting was felt necessary.

To achieve overall efficiency of business

Every businessman will make constant effort to improve his business. In order to formulate suitable policy and sound decision, he has to know answers to certain questions such as:

- What is the maximum profit which a business can make?
- Is the profit earned by it is more or less compared to the earlier years?
- Which product line is making more profit?
- Is too much of capital blocked in raw materials?
- Whether the cost of production has gone up compared to earlier years?
- Should the selling price require revision?

Cost accounting serves as a useful tool in the hands of management in this direction. By analysing the cost of production of every unit, it helps management to know the answers to the above questions.

5.4 Growth and Development of Cost Accounting

The history of cost accounting can be traced back to the fourteenth century. In the course of its evolution it passed through the following stages.

- In the first stage of its development, cost accounting was concerned only with the three prime cost elements, viz., direct material cost, direct labour cost and direct expenses. For recording the transactions relating to materials the important documents used were stores ledger, a material requisition note, and materials received note. To account for labour cost, employee time card and labour cost card were devised by Mr. Metcalfe. Later on a distinction between manufacturing and non-manufacturing cost was made by Mr. Norton. Thus material cost, labour cost and manufacturing cost constituted prime cost.
- Secondly, around the turn of the nineteenth century, the importance of non- manufacturing cost (overheads) was recognised as one of the distinct element of cost. The method of charging non-manufacturing cost to the production cost was devised under this stage.
- Thirdly, the techniques of estimation and standards were devised. Instead of using actual cost, standard costs were used and by comparing with the actual cost the differences were noted, analysed and disposed off accordingly. This helped in knowing the efficiency of the business undertaking.
- Fourthly, cost accounting methods were applied to all types of business undertakings. The costing principles and techniques were also extended to important functions of a business. In modern times the development of electronic data processing has occupied significant stage in the growth of cost accounting system.

5.5 Cost Accounting in Indian Context

The application of cost accounting methods in Indian industries was felt from the beginning of the twentieth century. The following factors have accelerated the system of cost accounting in our country.

- Increased awareness of cost consciousness by Indian industrialists with a view to ascertain costs more accurately for each product or job.
- Growing competition among manufacturers led to fixation of prices at a lower level so as to attract more customers.
- Economic policy of government which laid emphasis on planned economy with a view to achieve the targets led to cost reduction programmes by Indian industrialists.
- Increased government control over pricing led the Indian manufacturers to give utmost importance to the installation of cost accounts.
- The establishment of National Productivity Council in 1958 and the Statutory Recognition of Institute of Cost and Works Accountants of India in 1959 gave further encouragement to install cost accounting system in Indian industries.

5.6 Nature of Cost Accounting

The nature of cost accounting can be brought out under the following headings:

- Cost accounting is a branch of knowledge: Though considered as a branch of financial accounts, cost accounting is one of the important branches of knowledge, i.e., a discipline by itself. It is an organised body of knowledge consisting of its own principles, concepts and conventions. These principles and rules of course vary from industry to industry.
- Cost accounting is a science: Cost accounting is a science as it is a body of systematic knowledge relating not only to cost accounting, but relating to a wide variety of subjects such as law, office practice and procedure, data processing, production and material control, etc. It is necessary for a cost accountant to have intimate knowledge of all these field of study in order to carry out his day-to-day activities. However it is to be admitted that it is not a perfect science as in the case of natural science.
- Cost accounting is an art: Cost accounting is an art in the sense that it requires the ability and skill on the part of cost accountant in applying the principles, methods and techniques of cost accountancy to various management problems. These problems include the ascertainment of cost, control of costs, ascertainment of profitability, etc.

- Cost accounting is a profession: In recent years, cost accounting has become one of the important professions which have become more challenging. This view is evident from two facts. First, the setting up of various professional bodies such as National Association of Accountants (NAA) in USA, The Institute of Cost and Management Accountants in UK, the Institute of Cost and Works Accountants in India and such other professional bodies both in developed and developing countries have increased the growing awareness of costing profession among the people. Secondly, a large number of students have enrolled in these institutes to obtain costing degrees and memberships for earning their livelihood.

5.7 Objectives of Cost Accounting

The main objectives of cost accounting are as follows:

Ascertaining costs

The first and foremost objective of cost accounting is to find out the cost of a product, process or service. The other objectives which have been mentioned hereafter can be achieved only when the costs have been ascertained.

Determining selling price

Business enterprises are run on a profit-making basis. It is, thus, necessary that the revenue should be greater than the costs incurred in producing goods and services from which the revenue is to be derived. Cost accounting provides information regarding the cost to make and sell such products or services.

Measuring and increasing efficiency

Cost accounting involves a study of the various operations used in manufacturing a product or providing services. The study facilitates measuring the efficiency of the organisation as a whole as well as of the departments besides devising means of increasing the efficiency.

Cost control and cost reduction

Cost accounting assists in cost control by using techniques such as budgetary control, standard costing etc. for controlling costs. Budgets are prepared well in advance. The standards for each item of cost are determined, the actual costs are compared with the standard costs and variances are found out as to their causes. This greatly increases the operating efficiency of the enterprise. Besides this, constant research and developmental activities help in reduction of costs without compromising with the quality of goods or services.

Cost management

The term 'Cost Management' includes the activities of managers in short-run and long-run planning and control of costs. Cost management has a broad focus. It includes both cost control and lost reduction. As a matter of fact cost management is often invariably linked with revenue and profit planning. For instance, to enhance revenue and profits, the management often deliberately incurs additional costs for advertising and product modifications.

Ascertaining profits

Cost accounting also aims at ascertaining the profits of each and every activity. It produces statements at intervals as and when required by the management. The financial statements prepared under financial accounting, generally once a year or half-yearly, are spaced too far apart in time to meet the needs of the management. In order to operate the business at a high level of efficiency, it is essential for the management to have a frequent review of production, sales and operating results. Cost accounting provides daily, weekly or monthly volumes of units produced, accumulated costs together with appropriate analysis so that quantum of profit and profitability is known.

Providing basis for managerial decision-making

Costs accounting helps the management in formulation operative policies. These policies may relate to any of the following matters:

- Determination of cost, volume, profit relationship
- Shutting down or operating at a loss
- Making or buying from outside supplies
- Continuing with the existing plant and machinery or replacing them by improved and economical means

5.8 Importance of Cost Accounting

The importance of cost accounting is shown in the following points:

- Costing helps in periods of trade depression and trade competition: In periods of trade depression the business cannot afford to have leakages which pass unchecked. The management should know, where economies may be sought, waste eliminated and efficiency increased. The business has to wage a war for its survival. The management should know the actual cost of their products before embarking on any scheme of reducing the prices on giving tenders. Adequate costing facilitates this.
- Aids in price fixation: Though economic law of supply and demand, and activities of the competitors, to a great extent, determine the price of the article, cost to the producer does play an important part. The producer can take necessary guidance from his costing records.
- Helps in estimate: Adequate costing records provide a reliable basis upon which tenders and estimates may be prepared. The chances of losing a contract on account of over-rating or losing in the execution of a contract due to under-rating can be minimised. Thus, "ascertained costs provide a measure for estimates, a guide to policy, and a control over current production".
- Helps in channelling production on right lines: Costing makes it possible for the management to distinguish between profitable and non-profitable activities; profit can be maximised by concentrating on profitable operations and eliminating non-profitable ones.
- Wastages are eliminated: As it is possible to know the cost of the article at every stage, it becomes possible to chock various forms of waste, such as time, expenses etc. or in the use of machine, equipment and tools.
- Costing makes comparison possible: If the costing records are regularly kept, comparative cost data for different periods and various volumes of production will be available. It will help the management in forming future lines of action.
- Provides data for periodical profit and loss accounts: Adequate costing records supply the management with data which may be necessary for preparation of profit and loss account and balance sheet. It also explains in detail the sources of profit or loss revealed by the financial accounts thus helping in the presentation of information before the management.
- Aids in determining and enhancing efficiency: Losses due to wastage of material, idle time of workers, poor supervision etc., will be disclosed if the various operations involved in manufacturing a product are studied by a cost accountant. The efficiency can be measured and many costs controlled devices can be framed to increase the efficiency.
- Helps in cost reduction: Costs can be reduced in the long run when alternatives are tried. This is particularly important in the present day context of global competition; cost accounting has assumed special significance beyond cost control.
- Assists in increasing productivity: Productivity of material and labour is required to increase. To have growth and more profitability in the organisation, costing renders great assistance in measuring productivity and suggesting ways to improve it.

5.9 Characteristics of an Ideal Costing System

An ideal system of costing is that which achieves the objectives of a costing system and brings all advantages of costing to the business. The following are the main characteristics which an ideal system of costing should possess or the points which should be taken into consideration before installing a costing system.

- Suitability to the business: A costing system must be devised according to the nature, conditions, requirements and size of the business. Any system which serves the purposes of the business and supplies necessary information for running the business efficiently in an ideal system.
- Simplicity: The system of costing should be simple and plain so that it may be easily understood even by a person of average intelligence. The facts, figures and other information provided by cost accounting must be prescribed in the right time to the right person in order to make it more meaningful.
- Flexibility: A costing system must be flexible so that it may be changed according to changed conditions and circumstances. The system without such flexibility will be outmoded because of fast changes in business and industry. Thus, the system must have the capacity of expansion or contraction without much change.

- Economical: A costing system is like other economic goods. It requires money just like economic goods. If the system is too expensive, management may be unwilling to pay as buyers are not willing to pay for the goods if they are expensive as compared to their utility. Costing should not be expensive and must be adopted according to the financial capacity of the business.
- Comparability: The costing system must be such so that it may provide facts and figures necessary to the management for evaluating the performance by comparing with the past figures, or figures of other concerns or against the industry as a whole or other department of the same concern.
- Capability of presenting information at the desired time: The system must provide accurate and timely information so that it may be helpful to management for taking decisions and suitable action for the purpose of cost control.
- Uniformity of forms: All forms and pro formas necessary to the system should be uniform in size and quality of paper. Higher efficiency can be obtained by using colour technique in the paper, to distinguish different forms.
- Efficient system of material control: There should be an efficient system of stores and stock control as materials usually account for the greater proportion of the total cost. A good method of pricing material issued to production should be followed.

5.10 Financial Accounting v/s Cost Accounting

The following table illustrates the differences between financial accounting and cost accounting:

Topic	**Financial Accounting**	**Cost Accounting**
Audience	Financial accounting involves the preparation of a standard set of reports for an outside audience, which may include investors, creditors, credit rating agencies, and regulatory agencies.	Cost accounting involves the preparation of a broad range of reports that the management needs to run a business.
Format	The reports prepared under financial accounting are highly specific in their format and content, as mandated by either generally accepted accounting principles or international financial reporting standards.	Cost accounting involves creating reports that can be in any format specified by management, with the intention of including only that information relevant to a specific decision or situation.
Level of Detail	Financial accounting primarily focuses on reporting the results and financial position of an entire business entity.	Cost accounting usually results in reports at a much higher level of detail within the company, such as individual products, product lines, geographical areas, customers, or subsidiaries.
Product Cost	Financial accounting incorporates this information into its financial reports (primarily into the balance sheet).	Cost accounting compiles the cost of raw materials, work-in-process, and finished goods inventory.

Regulatory Framework	The structure of financial accounting reports are tightly governed by either generally accepted accounting principles or international financial reporting standards.	There is no regulatory framework governing the cost accounting reports.
Report Content	A financial report contains an aggregation of the financial information recorded through the accounting system.	The information in a cost accounting report can contain both financial information and operational information. The operational information comes from a variety of sources that are not under the direct control of the accounting department.
Report Timing	Financial accounting personnel issue reports only at the end of a reporting period.	Cost accounting staff may issue reports at any time and with any degree of frequency, depending upon management's need for the information.
Time Horizon	Financial accounting is only concerned with reporting the results of reporting periods that have already been completed.	Cost accounting does this too, but it can also be involved in a variety of projections for future periods.

5.11 Components of Total Cost

The following are the components of total cost:

Prime cost

It consists of costs of direct material, direct labour and direct expenses. It is also known as basic, first or flat cost.

Factory cost

It comprises of prime cost and in addition works of factory overheads which include costs of indirect material, indirect labour and indirect expenses of the factory. The cost is also known as works cost, production or manufacturing cost.

Office cost

If office and administrative overheads are added to factory cost, office cost is arrived at. This is also termed as administrative cost or the total cost of production.

Total cost

Office cost or total cost of production selling and distribution overheads are added to the total cost of production to get the total cost or the cost of sales.

Direct material + Direct labour + Direct expenses = Prime cost or Direct cost or First cost

Prime cost + Overhead cost= Works cost or Factory or Production cost or Manufacturing cost

Work cost + Office and Administrative overheads = Works cost or Factory or Production cost or Manufacturing cost

Office cost + Selling and Distribution overheads = Works cost or Factory or Production cost or Manufacturing cost

5.12 Cost Sheet

Cost sheet is a document that reflects the cost of the items and services required by a particular project or department for the performance of its business purposes. For example, a departmental cost sheet might include the material costs, labour costs and overhead costs incurred over a given time frame by a department and it therefore provides a record of costs that are chargeable to that department.

Cost Sheet or a Cost Statement is "a document which provides for the assembly of the estimated detailed elements of cost in respect of a cost unit." The analysis for the different elements of cost of the product is shown in the form of a statement called "Cost Sheet." The statement summarises the cost of manufacturing a particular list of product and discloses for a particular period.

- Prime cost
- Works cost (or) factory cost
- Cost of production
- Total Cost or Cost of Sales.

Importance of cost sheet

- It provides for the presentation of the total cost on the basis of the logical classification.
- Cost sheet helps in determination of cost per unit and total cost at different stages of production. It assists and enables in fixing the selling price.
- It facilitates effective cost control and cost comparison.
- It discloses operational efficiency and inefficiency to the management for taking corrective actions.
- Enables the management in the particulars preparation of cost estimates to tenders and quotations.

Illustration

Calculate prime cost from the following information:
Opening stock of raw material = Rs. 12,500
Purchased raw material = Rs. 75,000
Expenses incurred on raw material = Rs. 5,000
Closing stock of raw material = Rs. 22,500
Wages Rs. 47,600 Direct expenses Rs. 23,400

Solution:

Calculation of raw material consumed:
Raw material consumed = Opening stock of material + purchases of Raw material + expenses incurred on raw material - closing stock of raw material
= Rs 12,500 + Rs 75,000 + Rs 5,000 – Rs 22,500
= Rs. 92,500 – Rs 22,500
= Rs. 70,000

Prime cost= Raw material consumed + Direct labour + Direct expenses
= Rs 70,000 + Rs 47,600 + Rs 23,400
= Rs 1, 41,000

Or

It can be shown in vertical form such as cost sheet

Particular	Details (Rs)	Amount (Rs)
Opening stock of raw material		
Add:- Purchase	12,500	
Add:- Expenses incurred on purchases	7,500	
Raw material available	5,000	
Less :- closing stock of raw material	----------	
Raw material consumed	92,500	
Add:- Direct wages or labour	22,500	
Add:- Direct expenses	----------	
Prime cost		70,000
		47,600
		23,400

		1,41,000

Summary

- Cost Accounting is one of the important disciplines of accountancy to give proper information required to the management for effectively discharging its functions such as planning, organising, controlling, directing, co-ordinating and decision making.
- Financial accounting records in an overall manner the results of the operations of a business, using conventional double entry book-keeping techniques.
- The term 'Cost Management' includes the activities of managers in short-run and long-run planning and control of costs.
- In contrast to financial accounting (which considers money as the measure of economic performance) cost accounting considers money as the economic factor of production.
- "Cost accountancy" is used in the broadest sense when compared to "cost accounting" and "costing".
- Cost Sheet or a Cost Statement is "a document which provides for the assembly of the estimated detailed elements of cost in respect of cost centre or a cost unit."
- Financial accounting primarily focuses on reporting the results and financial position of an entire business entity.
- An ideal system of costing is that which achieves the objectives of a costing system and brings all advantages of costing to the business.
- The first and foremost objective of cost accounting is to find out cost of a product, process or service.
- Cost accounting is a science as it is a body of systematic knowledge relating not only to cost accounting, but relating to a wide variety of subjects such as law, office practice and procedure, data processing, production and material control, etc.
- Primary Cost consists of costs of direct material, direct labour and direct expenses. It is also known as basic, first or flat cost.
- Financial accounting is only concerned with reporting the results of reporting periods that have already been completed.
- The information in a cost accounting report can contain both financial information and operational information.
- Cost accounting involves the preparation of a broad range of reports that the management needs to run a business.
- There is no regulatory framework governing the cost accounting reports.
- The analysis for the different elements of cost of the product is shown in the form of a statement called Cost Sheet.
- If office and administrative overheads are added to factory cost, office cost is arrived at. This is also termed as administrative cost or the total cost of production.
- The structure of financial accounting reports are tightly governed by either generally accepted accounting principles or international financial reporting standards.
- The costing system must be such so that it may provide facts and figures necessary to the management for evaluating the performance by comparing with the past figures, or figures of other concerns or against the industry as a whole or other department of the same concern.
- The application of cost accounting methods in Indian industries was felt from the beginning of the twentieth century.

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Self Assessment

1. _____ accounting primarily focuses on reporting the results and financial position of an entire business entity.
   a. Cost
   b. Management
   c. Financial
   d. Direct

2. Financial accounting records in an overall manner the results of the operations of a business, using conventional _____ book-keeping techniques.
   a. output costing
   b. multiple costing
   c. double entry
   d. operational costing

3. The _____ in a cost accounting report can contain both financial information and operational information.
   a. data
   b. information
   c. process
   d. labour

4. The analysis for the different elements of cost of the product is shown in the form of a statement called _____.
   a. data sheet
   b. information sheet
   c. labour sheet
   d. cost sheet

5. Which of the following is not a component of cost?
   a. Prime cost
   b. Secondary cost
   c. Factory cost
   d. Total cost

6. Which of the following is not one of the characteristics of ideal system of cost?
   a. Simplicity
   b. Economical
   c. Comparability
   d. Formatting

7. Which of the following statements is true?
   a. Cost accounting is only concerned with reporting the results of reporting periods that have already been completed.
   b. There is no regulatory framework governing financial accounting reports.
   c. Financial accounting involves the preparation of a broad range of reports that the management needs to run a business.
   d. The term 'Cost Management' includes the activities of managers in short-run and long-run planning and control of costs.

8. Which of the following statements is false?
   a. The analysis for the different elements of cost of the product is shown in the form of a statement called information sheet.
   b. The first and foremost objective of cost accounting is to find out cost of a product, process or service.
   c. The analysis for the different elements of cost of the product is shown in the form of a statement called Cost Sheet.
   d. Factory cost is also known as works cost, production or manufacturing cost.

9. Cost accounting compiles the cost of raw materials, work-in-process, and _____ inventory.
   a. output goods
   b. multiple goods
   c. conversion goods
   d. finished goods

10. A _____ system must be devised according to the nature, conditions, requirements and size of the business.
   a. process
   b. costing
   c. financial
   d. product

Chapter VI

Elements of Costs

Aim

The aim of this chapter is to:

- introduce the elements of cost
- elucidate the managerial decisions
- explain the budgeted costs

Objectives

The objectives of this chapter are to:

- explain the methods of costing
- explicate the techniques of costing
- elucidate direct and indirect materials

Learning outcome

At the end of this chapter, you will be able to:

- understand the direct and indirect expenses
- identify the analytical classification of costs
- recognise the classification of financial accounting

6.1 Introduction

A classification has to be made to arrive at the detailed costs of departments, production orders, jobs or other cost units. The total cost of production can be found with out such analysis, and in many instances an average unit cost could be obtained, but none of the advantages of an analysed cost would be available.

6.2 Elements of Cost

Simple ascertainment of total cost cannot satisfy the various requirements of decision making. For effective control and managerial decision making, data is to be provided on the basis of analysed and classified costs. In order to satisfy this objective, the cost is analysed by elements of cost, i.e., by nature of expenditure. The elements of cost are:

- materials
- labour
- expenses

Direct material, direct labour and direct expenses are those which can be traced in relationship with a particular process, job, operation or product. Indirect material, indirect labour and indirect expenses are those which are of general nature and cannot be traced in relationship with a particular process, operation, job or product.
Direct material, direct labour and direct expenses together constitute prime cost. Indirect material, indirect labour of the factory, indirect expenses together constitute factory (or works).

Prime cost + Factory (or works) overhead = Factory cost or works cost
Factory cost + Administration overhead = Cost of production
Cost of production + Selling and distribution overhead = Total cost or cost of sales
The above elements of cost are analysed in the chart given below:

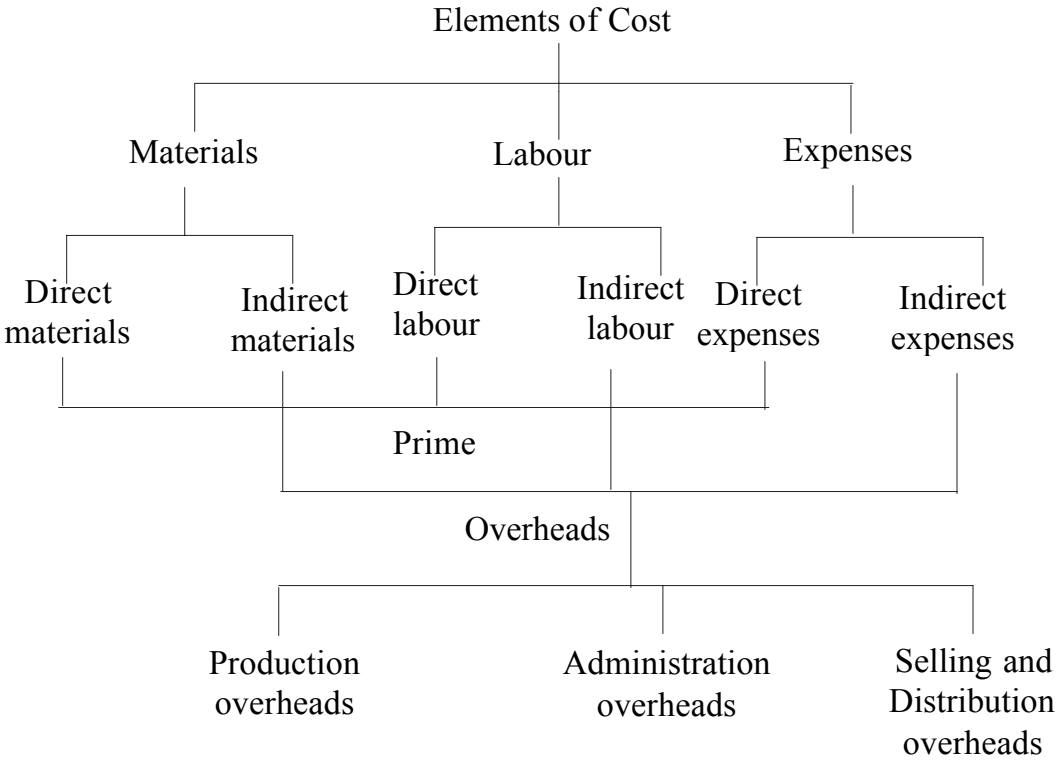

Fig 6.1 Elements of costs

6.2.1 Materials

The substances from which the products are made are known as materials. They can be classified into direct or indirect.

- Direct materials: Direct materials are those materials which form a part of finished product. These materials cost can be conveniently identified with and allocated to a particular product, process or job. It is a part of a prime cost, e.g., timber in furniture making, cloth in dress making, leather in shoe making, bricks in building a house, etc.
- Indirect materials: Indirect materials are those materials which do not form a part of a finished product. Cost of indirect materials cannot be identified with and allocated, but can be apportioned to a particular product, process or job, e.g., Cotton waste, lubricant, grease, etc.

6.2.2 Labour

For the conversion of raw materials into a finished product, human effort is needed. Such human effort is called labour. Labour can be direct as well as indirect.

- Direct Labour: Direct labour is that labour which is directly engaged in the production of goods or services. The wages of such labour is known as direct wages. These labour cost or direct wages can be identified with and allocated to a particular product, process or job. It is a part of the prime cost, e.g., wages of spinners and weavers in a textiles factory.
- Indirect labour: Indirect labour is that labour which is not directly engaged in the production of goods or services. It indirectly helps the direct labour engaged in production. The wages paid for indirect labour is known as indirect wages. Indirect wages cannot be identified with and allocated, but can be apportioned to a particular product, process or job, e.g., wages of mechanics, supervisors, watchman, sweepers, time-keeper etc.

6.2.3 Expenses

Expenses may be either direct or indirect.

- Direct Expenses: All expenses (other than direct material cost or direct wages) that are directly charged to production are direct expenses. It is parts of the prime cost, e.g., excise duty, royalty on production, cost of special drawings and designs, architect's fees or equipment for a particular job, etc.
- Indirect Expenses: Expense (other than indirect material and indirect labour) that is not directly charged to production is indirect expenses. It can be classified into the following:
  - Factory overheads: These are also called manufacturing overhead, works overhead or work on cost. Factory overheads cover all the indirect expenses incurred from the stage of raw materials to finished goods. It includes indirect material, indirect wages and indirect expenses, e.g., factory rent, supervisor's salary, power and fuel, heating and lighting, depreciation of factory building, etc.
  - Administrative overheads: These are expenses incurred for running the administrative office, e.g., office rent and salaries, printing and stationery, legal expenses, telephone expenses etc.
  - Selling overheads: These are expenses incurred for the actual sales and promotion of sales, e.g., salaries of sales manager, commission, travelling expenses of salesman and promotion expenses like advertising and publicity, after sales service, etc.
  - Distribution overheads: These are expenses concerned with the packing and delivery of goods to the customers e.g., packing charges, warehouse expenses, depreciation of delivery van, loading charges, etc.

6.3 Classification of Cost

Cost classification is the process of grouping costs according to their common characteristics. It is the placement of all the 'like items' together according to their common characteristics. A suitable classification of costs is of vital importance in order to identify the cost with cost centres or cost units. Costs may be classified according to their nature, i.e. material, labour and expenses and a number of other characteristics. The same cost figures are classified according to different ways of costing depending upon the purpose to be achieved and requirements of a particular concern. The important ways of classification are as follows:

6.3.1 Nature or Element

According to this classification, the costs are divided into three categories, i.e., Materials, Labour and Expenses. There can be a further sub-classification of each element; for example, material can be classified into raw material components, spare parts, consumable stores, packing material etc. This classification is important as it helps to find out the total cost, how the total cost is constituted and valuation of the work in progress.

6.3.2 Functions

According to this classification costs are divided in the light of the different aspects of basics managerial activities involved in the operation of a business undertaking. It leads to grouping of cost according to the broad divisions or functions of a business undertaking, i.e., production, administration, selling and distribution. According to this classification, costs are divided as follows:

- Manufacturing and Production Cost: This is the total of costs involved in manufacture, construction and fabrication of units of production.
- Commercial Cost: This is the total of costs incurred in the operation of a business undertaking other than the cost of manufacturing and production. Commercial cost may further be sub-divided into:
  - Administrative cost
  - Selling and Distribution cost

6.3.3 Direct and Indirect

According to this classification, total cost is divided into direct costs and indirect costs. Direct costs are those costs which are incurred for and may be conveniently identified with a particular cost centre or a cost unit. Materials used and labour employed in manufacturing an article or in a particular process of production are common examples of direct costs. Indirect costs are those cost which are incurred for the benefit of number of cost centres or cost units and cannot be conveniently identified with a particular cost centre or cost unit. Examples of indirect cost include the rent of a building, management salaries, machinery depreciation etc.

The nature of the business and the cost unit chosen will determine which costs are direct and which are indirect. For example, the hiring of a mobile crane to be used by a contractor at the site would be regarded as a direct cost, but if the crane is used as a part of the services of a factory, the hiring charges would be regarded as indirect cost because it will probably benefit more than one cost centre. The importance of the distinction of costs into direct and indirect lies in the fact that direct costs of a product or activity can be accurately determined while indirect costs have to be allocated on the basis of certain assumptions with regard to their incidence.

6.3.4 Variability

According to this classification, costs are classified according to their behaviour in relation to changes in the level of activity or volume of production. On this basis, costs are classified into three groups viz. fixed, variable and semi-variable.

- Fixed or period costs are those which remain fixed in total amount irrespective of an increase or decrease in the volume of output or productive activity for a given period of time. Fixed cost per unit decreases as production increases and increases as production declines. Examples of fixed costs are rent, insurance of factory building, factory manager's salary etc. These fixed costs are constant in total amount, but fluctuate per unit as production changes. These costs are known as period costs because these are dependent on time rather than on output. Such costs remain constant per unit of time such as factory rent of Rs.10, 000 per month remaining same for every month irrespective of output of every month.
- Variable or product costs are those which vary in total in direct proportion to the volume of output. These costs per unit remain relatively constant with the changes in production. Thus, variable costs fluctuate in total amount but tend to remain constant per unit as production activity changes. Examples are direct material costs, direct labour costs, power, repairs etc. Such costs are known as product costs because they depend on the quantum of output rather than on time.

- Semi-variable costs are those which are partly fixed and partly variable. For example, the telephone expenses included a fixed portion of annual charge plus variable charge according to calls; thus total telephone expenses are semi-variable. Other examples of such costs are depreciation, repairs and maintenance of building and plant etc.

6.3.5 Controllability

Under this, costs are classified according to whether or not they are influenced by the actions of a given member of the undertaking. On this basis it is classified into two categories:

- Controllable costs are those costs which can be influenced by the action of a specified member of an undertaking, that is to say, costs which are at least partly within the control of management. An organisation is divided into a number of responsibility centres and controllable costs incurred in a particular cost centre can be influenced by the action of the manager responsible for the centre. Generally speaking, all the direct costs including direct material, direct labour and some of the overhead expenses are controlled by the lower level of management.
- Uncontrollable costs are those costs which cannot be influenced by the action of a specified member of an undertaking that it is to say, and which is within the control of management. Most of the fixed costs are uncontrollable. For example, rent of the building is not controllable and so are managerial salaries. Overhead cost, which is incurred by one service section and is apportioned to another which receives the service, is also not controllable by the latter.

The distinction between controllable and uncontrollable is sometimes left to an individual judgment and is not sharply maintained. It is only in relation to a particular level of management or an individual manager that we may say whether a cost is controllable or uncontrollable. A particular item of cost which may be controllable from the point of view of one level of management may be uncontrollable from another point of view. Moreover, there may be an item of cost which is controllable from long term point of view and uncontrollable from short term point of view. This is partly so in the case of fixed costs.

6.3.6 Normality

Under this, costs are classified according to whether these are cost which are normally incurred as a given level of output in the conditions in which that level of activity is normally attained. On this basis, it is classified into two categories:

- Normal cost is the cost which is normally incurred at a given level of output in the conditions in which that level of output is normally attained. It is a part of cost of production.
- Abnormal cost is the cost which is not normally incurred at a given level of output in the conditions in which that level of output is normally attained. It is not a part of cost of production and charged to Costing Profit and Loss Account.

6.3.7 Capital and Revenue

The cost which is incurred in purchasing assets either to earn income or increase the earning capacity of the business is called capital cost. For, e.g., the cost of a rolling machine in case of a steel plant. Such a cost is incurred at one point of time, but the benefits accruing from it is spread over a number of accounting years. If any expenditure is done in order to maintain the earning capacity of the concern, such as cost of maintaining an asset or running a business it is called revenue expenditure. For, e.g., cost of materials used in production, labour charges paid to convert the material into production, salaries, depreciation, repairs and maintenance charges, selling and distribution charges etc. The distinction between capital and revenue items is important in costing as all items of revenue expenditure are taken into consideration while calculating cost, whereas capital items are completely ignored.

6.3.8 Time

Cost can also be classified as:

- Historical costs are those cost which is ascertained after their incurrence. Such costs are available only when the production of a particular thing has already been done. Such costs are only of historical value and not at all helpful for cost control purposes. The basic characteristics of such costs are:

- They are based on recorded facts.
- They can be verified because they are always supported by the evidence of their occurrence.
- They are mostly objective because they relate to happenings which have already taken place.

- Pre-determined costs: Such costs are estimated costs, i.e., computed in advance of production taking into consideration the previous period's costs and the factors affecting such costs. Pre-determined costs are determined on scientific basis and then become standard cost. Such costs when compared with actual costs will give the reasons of variance and will help the management to fix the responsibility and to take remedial action to avoid its recurrence in future.

Historical costs and pre-determined costs are not mutually exclusive, but they work together in the accounting system of an organisation. In this competitive age, it is better to lay down standards, so that after comparison with the actual, the management may be able to take stock of the situation to find out as to how far the standards fixed by it have been achieved and take suitable action in the light of such information. Therefore, even in a system when historical costs are used, pre-determined costs have a very important role to play because a figure of historical cost by itself has no meaning unless it is related to some other standard figure to give meaningful information to the management.

6.3.9 Planning and Control

Planning and control are two important functions of management. Cost accounting furnishes information to the management which is helpful is the due discharge of these two functions. According to this, costs can be classified as budgeted costs and standard costs.

- Budgeted costs: Budgeted costs represent an estimate of expenditure for different phases of business operations such as manufacturing, administration, sales, research and development etc. coordinated in a well conceived framework for a period of time in future which subsequently becomes the written expression of managerial targets to be achieved. Various budgets are prepared for various phases, such as raw material cost budget, labour cost budget, cost of production budget, manufacturing overhead budget, office and administration overhead budget etc. Continuous comparison of actual performance (i.e., actual cost) with that of the budgeted cost is made so as to report the variations from the budgeted cost to the management for corrective action.
- Standard Cost: Budgeted costs are translated into actual operation through the instrument of standard costs. The Institute of Cost and Management Accountants, London defines standard cost as follows: "Standard cost is the pre-determined cost based on a technical estimate for materials, labour and overhead for a selected period of time and for a prescribed set of working conditions". Thus, standard cost is a determination, in advance of production of what the cost should be. Budgeted costs and standard costs are similar to each other to the extent that both of them represent estimates for cost for a period of time in future.

In spite of this, they differ on the following aspects:

- Standard costs are scientifically predetermined costs of every aspect of business activity, whereas budgeted costs are mere estimates made on the basis of past actual financial accounting data adjusted to future trends. Thus, budgeted costs are projection of financial accounts, whereas standard costs are projection of cost accounts.
- The primary emphasis of budgeted costs is on the planning function of management, whereas the main thrust of standard costs is on control because standard costs lay emphasis on what should be the costs.
- Budgeted costs are extensive, whereas standard costs are intensive in their application. Budgeted costs represent a macro approach of business operations because they are estimated in respect of the operations of a department. Contrary to this, standard costs are concerned with each and every aspect of business operation carried in a department. Thus, budgeted costs deal with aggregates, whereas standard costs deal with individual parts which make the aggregate. For example, budgeted costs are calculated for different functions of the business i.e., production, sales, purchases, etc., whereas standard costs are compiled for various elements of costs, i.e. materials, labour and overhead.

6.3.10 Managerial Decisions

On this basis, costs may be classified into the following costs:

- Marginal cost: Marginal cost is the total of variable costs, i.e., prime cost plus variable overheads. It is based on the distinction between fixed and variable costs. Fixed costs are ignored and only variable costs are taken into consideration for determining the cost of products and value of work in progress and finished goods.
- Out of pocket costs: This is that portion of the cost which involves payment to outsiders, i.e., gives rise to cash expenditure as opposed to such costs as depreciation, which do not involve any cash expenditure. Such costs are relevant for price fixation during recession or when make or buy decision is to be made.
- Differential costs: The change in costs due to change in the level of activity or pattern or method of production is known as differential costs. If the change increases the cost; it will be called incremented cost. If there is decrease in cost resulting from the decrease in output, the difference is known as decremented cost.
- Sunk costs: A sunk cost is an irrecoverable cost and is caused by complete abandonment of a plant. It is the written down value of the abandoned plant less its salvage value. Such costs are not relevant for decision making and are not affected by increase or decrease in volume.
- Imputed costs: These costs are those costs which appear in cost accounts only, e.g., national rent charged on business premises owned by the proprietor, interest on capital for which no interest has been paid. These costs are also known as notional costs. When alternative capital investment projects are being evaluated, it is necessary to consider the imputed interest on capital, before a decision is arrived at, as to which is the most profitable project.
- Opportunity cost: It is the maximum possible alternative earning that might have been earned if the productive capacity or services had been put to some alternative use. In simple words, it is the advantage, in measurable terms, which has been foregone due to not using the facility in the manner originally planned. For example, if an owned building is proposed to be used for a project, the probable rent of the building is the opportunity cost which should be taken into consideration while evaluating the profitability of the project.
- Replacement cost: It is the cost at which an asset or material identical to that which is being replaced or revalued could be purchased. It is the cost of replacement at the current market price.
- Avoidable and unavoidable cost: Avoidable costs are those costs which can be eliminated if a particular product or department, with which they are directly related, is discontinued. For example, salary of the clerks employed in a particular department can be eliminated, if the department is discontinued. Unavoidable cost is that cost which will not be eliminated with the discontinuation of a product or department. For example, salary of the factory manager or the factory's rent which cannot be eliminated even if a product is eliminated.

6.4 Methods of Costing

The method of costing refers to a system of cost ascertainment and cost accounting. Industries differ in their nature, in the products they produce and the services they offer. Hence, different methods of costing are used by different industries. For example, the method of costing employed by a building contractor is different from that of a transport company.

Job costing and process costing are the two basic methods of costing. Job costing is suitable to industries which manufacture or execute the work according to the specifications of the customers. Process costing is suitable to industries, where production is continuous and the units produced are identical. All other methods are combinations, extensions or improvements of these basic methods. The methods of costing, thus, are as follows:

- Job costing: It is also called specific order costing. It is adopted by industries, where there is no standard product and each job or work order is different from the others. The job is done strictly according to the specifications given by the customer and usually it takes a short time for completion. The purpose of job costing is to ascertain the cost of each job separately. Job costing is used by printing press, motor repair shops, automobile garages, film studios, engineering industries etc. Job costing is further classified into:

- Contract costing: It is also known as terminal costing. Basically, this method is quite similar to job costing. However, it is used when the job is big and spreads over a longer period of time. The work is done, according to the specifications provided by the customer. The purpose of contract costing is to ascertain the cost incurred on each contract separately. Hence, a separate account is prepared for each contract. This method is used by firms engaged in ship building, construction of buildings, bridges, dams and roads.
- Cost plus Contract: These contracts provide for the payment by the contracted of the actual cost of manufacture plus a stipulated profit. The profit is to be added to the cost. It may be a fixed amount or it may be a stipulated percentage of cost. These contracts are generally entered into when at the time of undertaking of a work, it is not possible to estimate its cost with reasonable accuracy due to unstable condition of material, labour etc. or when the work is spread over a long period of time and prices of materials, rates of labour etc. are liable to fluctuate
- Batch costing: It is an extension of job costing. A batch is a group of identical products. All the units in a particular batch are uniform in nature and size. Hence, each batch is treated as a cost unit and calculated separately. The total cost of a batch is ascertained and is divided by the number of units in the batch to determine the cost per unit. Batch costing is adopted by manufacturers of biscuits, ready-made garments, spare parts, medicines etc.

- Process costing: It is also called continuous costing. In certain industries, the raw material passes through different processes before it takes the shape of a final product. In other words, the finished product of one process becomes the raw material for the subsequent process. Process costing is used in such industries. A separate account is opened for each process to find out the total cost as well as the cost per unit at the end of each process. Process costing is applied to continuous process industries such as chemicals, textiles, paper, soap, leather etc. Process Costing is further divided into:
  - Unit costing: This method is also known as single or output costing. It is suitable to industries, where production is continuous and units are identical. The objective of this method is to ascertain the total cost as well as the cost per unit. A cost sheet is prepared by taking into account the cost of material, labour and overheads. Unit costing is applicable in the case of mines, oil drilling units, cement works, brick works and units manufacturing cycles, radios, washing machines etc.
  - Operating costing: This method is followed by industries which render services. To ascertain the cost of such services, composite units like passenger kilometres and tone kilometres are used for ascertaining costs. For example, in the case of a bus company, operating costing indicates the cost of carrying a passenger per kilometre. Operating costing is adopted by airways, railways, road transport companies (goods as well as passengers), hotels, cinema halls, power houses etc.
  - Operation costing: This is a more detailed application of process costing. It involves costing by every operation. This method is used, where there is mass production of repetitive nature involving a number of operations. The main purpose of this method is to ascertain the cost of each operation. For instance, the manufacture of handles for bicycles involves a number of operations such as cutting steel sheets into proper strips, moulding, machining and finally polishing. The cost of these operations may be calculated separately. Operation costing provides a microscopic analysis of costs to achieve accuracy and it is applied in industries such as spare parts, toy making and engineering.
  - Multiple Costing: It is also known as composite costing. It refers to a combination of two or more of the above methods of costing. It is adopted in industries, where several parts are produced separately and assembled into a single product.

6.5 Techniques of Costing

In addition to the different methods of costing, the following techniques are used for the purpose of ascertaining costs.

Historical costing

- In this, actual costs are ascertained after they have been incurred. This is a conventional method of cost ascertainment.

Direct costing

- It is the ascertainment of direct costs in respect of department, product or process. This is the aggregate of marginal cost and a portion of fixed cost that are identifiable with the product or process. Direct costs are, therefore, traceable costs.

Absorption costing

- It is also known as total cost approach. Under this technique, all the costs, both fixed and variable are charged to product, process or operations. It is useful in submitting tenders, preparing job estimates etc.

Uniform costing

- It is the use of some costing principles and methods by several concerns for common control or comparison of costs.

Marginal costing

- It classifies cost into fixed and variable; and only variable costs are charged to product. The C. I. M. A. London defines Marginal costing as "a technique of costing which aims at ascertaining marginal costs, determining the effects of changes in costs, volume, price etc. on the Company's profitability, stability etc. and furnishing the relevant data to the management for enabling it to take various management decisions by segregating total costs into variable and fixed costs."

Standard costing

- Standard costing is predetermined cost. The costs are determined in advance of the production. Standard performance is set in terms of costs. Actual costs are compared with the standards and variations are found. Then, reasons for variations are investigated and remedial actions are taken. This system enables control of costs and also measurement of efficiency of operations.

Summary

- For effective control and managerial decision making, data is to be provided on the basis of analysed and classified costs.
- The substances from which the products are made are known as materials.
- Indirect materials are those materials which do not form a part of a finished product.
- Expenses may be either direct or indirect.
- Factory overheads cover all the indirect expenses incurred from the stage of raw materials to finished goods.
- Cost classification is the process of grouping costs according to their common characteristics.
- Costs may be classified according to their nature, i.e. material, labour and expenses and a number of other characteristics.
- Manufacturing and production cost is the total of costs involved in manufacture, construction and fabrication of units of production.
- Indirect costs are those cost which are incurred for the benefit of number of cost centres or cost units and cannot be conveniently identified with a particular cost centre or cost unit.
- Fixed cost per unit decreases as production increases and increases as production declines.
- Semi-variable costs are those which are partly fixed and partly variable.
- An organisation is divided into a number of responsibility centres and controllable costs incurred in a particular cost centre can be influenced by the action of the manager responsible for the centre.
- Normal cost is the cost which is normally incurred at a given level of output in the conditions in which that level of output is normally attained.
- The cost which is incurred in purchasing assets either to earn income or increase the earning capacity of the business is called capital cost.
- The cost which is ascertained after their incurrence is called historical costs.
- Historical costs and pre-determined costs are not mutually exclusive, but they work together in the accounting system of an organisation.
- Budgeted costs are translated into actual operation through the instrument of standard costs.
- Standard cost is the pre-determined cost based on a technical estimate for materials, labour and overhead for a selected period of time and for a prescribed set of working conditions.
- The primary emphasis of budgeted costs is on the planning function of management, whereas the main thrust of standard costs is on control because standard costs lay emphasis on what should be the costs.
- Budgeted costs represent a macro approach of business operations because they are estimated in respect of the operations of a department.
- The change in costs due to change in the level of activity or pattern or method of production is known as differential costs.
- A sunk cost is an irrecoverable cost and is caused by complete abandonment of a plant.
- Avoidable costs are those costs which can be eliminated if a particular product or department, with which they are directly related, is discontinued.
- The method of costing refers to a system of cost ascertainment and cost accounting.
- Job costing and process costing are the two basic methods of costing.
- Job costing is used by printing press, motor repair shops, automobile garages, film studios, engineering industries etc.
- The purpose of contract costing is to ascertain the cost incurred on each contract separately.
- Standard costing is pre-determined cost. The costs are determined in advance of the production.

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Self Assessment

1. Which of the following is not one of the elements of cost?
   a. Materials
   b. Expenses
   c. Labour
   d. Duties

2. _____ are those materials which form a part of finished product.
   a. Direct materials
   b. Factory materials
   c. Indirect materials
   d. Distribution overheads

3. Which of the following is also called as manufacturing overhead?
   a. Selling overheads
   b. Distribution overheads
   c. Administrative overheads
   d. Factory overheads

4. _____ is the total of costs involved in manufacture, construction and fabrication of units of production.
   a. Commercial cost
   b. Manufacturing and production cost
   c. Fixed cost
   d. Period cost

5. _____ is called continuous costing.
   a. Batch costing
   b. Process costing
   c. Unit costing
   d. Operating costing

6. Which of the following is also called output costing?
   a. Single costing
   b. Operating costing
   c. Operation costing
   d. Multiple costing

7. Which of the following is not amongst one of the techniques of costing?
   a. Direct costing
   b. Absorption costing
   c. Indirect costing
   d. Marginal costing

8. _____ is the use of some costing principles and methods by several concerns for common control or comparison of costs.
   a. Standard costing
   b. Absorption costing
   c. Marginal Costing
   d. Uniform costing

9. _____ also known as total cost approach.
   a. Standard costing
   b. Absorption costing
   c. Marginal Costing
   d. Uniform costing

10. Which of the following statements is false?
   a. Process costing is suitable to industries, where production is non- continuous and the units produced are different.
   b. The purpose of job costing is to ascertain the cost of each job separately.
   c. Job costing is used by printing presses, motor repair shops, automobile garages, film studios, engineering industries etc.
   d. Job costing and process costing are the two basic methods of costing.

Chapter VII

Standard Costing

Aim

The aim of this chapter is to:

- introduce the term standard costing
- explain the advantages of standard costing
- elucidate the objectives of cost accountancy

Objectives

The objectives of this chapter are to:

- explain the limitations of standard costing
- explicate the system of standard costing
- elucidate classification and codification of accounts

Learning outcome

At the end of this chapter, you will be able to:

- understand the expected level of activity
- identify the types of standards
- recognise the standards for direct labour cost

7.1 Introduction

Cost control is a basic objective of cost accountancy. Standard costing is the most powerful system ever invented for cost control. Historical costing or actual costing is nothing, but, a record of what happened in the past. It does not provide any 'Norms' or 'Yardsticks' for cost control. The actual costs lose their relevance after that particular accounting period. However, it is necessary to plan the costs, and to determine the cost of a product or service. If the actual costs do not conform to what the costs should be, the reasons for the change should be assessed and appropriate action should be initiated to eliminate the causes.

Standard costing fulfils the need to compensate the short comings of historical costing from the point of view of cost control.

- It provides the norms or yard sticks in the form of standards- specifying what costs should be.
- Comparison of actual costs with standards is facilitated to ascertain variances for each element of cost.
- The variances are further analysed for contributory reasons as responsibility is fixed on the basis of the reasons for each variance.
- Corrective measures are under taken to eliminate the unfavourable variances, wherever possible.

Thus, standard costing is a costing technique specifically evolved to provide complete 'Infrastructure' and 'Systematic approach' for cost control.

Standard, Standard cost and Standard costing are inter-related concepts with inter-disciplinary approach. Standard, according to Prof. Eric L. Kohler, "is a desired attainable objective, a performance, a goal, a model". Standard may be used to a pre-determined rate or a pre-determined amount or a pre-determined cost.

Standard cost is pre-determined cost or forecast estimate of cost. I.C.M.A. Terminology defines Standard Cost as, "a pre-determined cost, which is calculated from management standards of efficient operations and the relevant necessary expenditure. It may be used as a basis for price-fixing and for cost control through variance analysis". The other names for standard costs are pre-determined costs, budgeted costs, projected costs, model costs, measured costs, specifications costs, etc. Standard cost is a predetermined estimate of cost to manufacture a single unit or a number of units of a product during a future period. Actual costs are compared with these standard costs.

Standard Costing is defined by I.C.M.A. Terminology as, "The preparation and use of standard costs, their comparison with actual costs and the analysis of variances to their causes and points of incidence". "Standard costing is a method of ascertaining the costs, whereby statistics are prepared to show (a) the standard cost (b) the actual cost (c) the difference between these costs, which is termed the variance" says Wheldon. Thus, the technique of standard cost study comprises of:

- Pre-determination of standard costs
- Use of standard costs
- Comparison of actual cost with the standard costs
- Find out and analyse reasons for variances
- Reporting to management for proper action to maximise efficiency

7.2 Advantages and Limitations of Standard Costing

When compared to other costing methods, there are several decided advantages associated with standard costing. The advantages of standard costing are as follows:

- Cost control: Standard costing is universally recognised as a powerful cost control system. Controlling and reducing costs becomes a systematic practice under standard costing.
- Elimination of wastage and inefficiency: Wastage and inefficiency in all aspects of the manufacturing process are curtailed, reduced and eliminated over a period of time if standard costing is in continuous operation.
- Norms: Standard costing provides the norms and yard sticks with which the actual performance can be measured and assessed.

- Locates sources of inefficiency: It recognises the areas, where operational inefficiency exists. It also measures the extent of the inefficiency.
- Fixing responsibility: Variance analysis can determine the persons responsible for each variance .Shifting or evading responsibility is not easy under this system.
- Management by exception: The principle of 'management by exception' can be easily followed because problem areas are highlighted by negative variances.
- Improvement in methods and operations: Standards are set on the basis of systematic study of the methods and operations. As a consequence, cost reduction is possible through improved methods and operations.
- Guidance for production and pricing policies: Standards are valuable guides to the management in the formulation of pricing policies and production decisions.
- Planning and Budgeting: Budgetary control is far more effective in conjunction with standard costing. Being pre-determined costs on scientific basis, standard costs are also useful in planning the operations.
- Inventory valuation: Valuation of stocks becomes a simple process by valuing them at standard cost.

The use of standard costs can also present a number of potential problems or disadvantages. Most of these problems result from improper use of standard costs and the management by exception principle or from using standard costs in situations in which they are not appropriate. The limitations of standard costing are as follows:

- It is costly, as the setting of standards needs high technical skill.
- Maintaining an up-to-date standard is a problem; thus, periodic revision of standard is a costly thing.
- Inefficient staff is incapable of operating this system.
- Since it is difficult to set correct standards, it is difficult to ascertain correct variance.
- Industries, which are subject to frequent changes in technological process or the quality of material or the character of labour, need a constant revision of standard. However, revision of standard is more expensive.
- For small concerns, standard costing is expensive.

7.3 Application of Standard Costing

Standard Costing is a control device. It is not a separate method of product costing. Any activity of recurring nature is susceptible for setting standards. The standard-cost process is mostly used to control the operating tasks. Manufacturing activities are routine and frequent and are, therefore, easy for establishing standards .Industries, where standardised and uniform work of repetitive nature is done are suitable for the introduction of standard costing. Standard costing system is of little use or no use, where works vary from job to job or contract to contract.

While setting the standard cost for operations, process or product, the following preliminaries must be gone through:

- There must be Standard Committee, similar to Budget Committee, in which Purchase Manager, Personnel Manger, and Production Manager are represented.
- The Cost Accountant coordinates the functions of the Standard Committee.
- Study the existing costing system, cost records and forms in use. If necessary, review the existing system.
- A technical survey of the existing methods of production should be undertaken so that accurate and reliable standards can be established.
- Determine the type of standard to be used.
- Fix the standard for each element of cost.
- Determine standard costs for each product.
- Fix the responsibility for setting standards.
- Classify the accounts properly so that variances may be accounted for in the manner desired.
- Comparison of actual costs with pre-determined standards to ascertain the deviations.
- Action to be taken by the management to ensure that adverse variances are not repeated.

7.4 Introduction of Standard Costing System

Introducing standard costing in any establishment requires the fulfilment of following preliminaries.

7.4.1 Establishment of Cost Centres

A cost centre is a location, person or item of equipment for which costs maybe ascertained and used for the purpose of cost control. The cost centres divide an entire organisation into convenient parts for costing purpose. The nature of production and operations, the organisational structure, etc. influence the process of establishing cost centres. No hard and fast rule can be laid down in this regard. Establishment of the cost centres is essential for pinpointing responsibility for variances.

7.4.2 Classification and Codification of Accounts

The need for quick collection and analysis of cost information necessitates classification and codification. Accounts are to be classified according to different items of expenses under suitable headings. Each of the headings is to be given a separate code number. The codes and symbols used in the process facilitate the introduction of computerisation.

7.4.3 Determining Standards and their Basis

Standards can be classified into two broad categories:

- Current standards: These are standards which are related to current conditions, particularly to the budget period. They are for short-term use and are more suitable for control purpose. They are also more amenable for combining with budgeting.
- Basic standards: These are long-term standards; some of them intend to be in use for decades. They are helpful for planning long-term operations and growth. Basic standards are established for some base year and are not changed for a long period of time.

It is preferable to use both kinds of standards depending on the nature and type of activity or cost for which they are fixed. Generally, the number of basic standards maybe very few and current standards are predominant in number.

Basic for standards

There can be significant difference in the standards set depending on the base used for them. There are different bases for setting standard, whether they are current standards for short-term or basic standards for long-term use. They are:

- Ideal standards: These standards reflect the best performance in every aspect. What is possible under ideal circumstances in all aspects is reflected in these standards. They are impractical and unattainable in practice. Their utility for control purpose is negligible.
- Past performance based standards: The actual performance attained in the past may be taken as a basis and the same may be retained as standard. Such standards do not provide any incentive or challenge to the employees. They are too easy to attain. Their value from cost control point of view is minimal.
- Normal standard: It is defined as “the average standard which, it is anticipated can be attained over a future period of time, preferably long enough to cover one trade cycle”. They are average standard reflecting the average performance over a complete trade cycle which may take three to five years. For a specific period, say a budget period, their relevance is negligible.
- Attainable high performance standards: They are based on what can be achieved with reasonable hard work and efforts. They are based on the current conditions and capability of the workers. These standards are considered to be of great practical value because they provide sufficient incentive and challenge to the workers to attain them. Any variances from such standard are really significant because the standard which is attainable with effort is not attained.

7.4.4 Determining the expected level of activity

Capacity of operation or level of activity expected over a future period is vital in fixing the current or short-term standards. When the activity level is decided on the basis of sales or production- whichever is the limiting factor, all standard can be developed with the activity level as the focal point. The purchase of material, usage of material, labour hours to be worked, etc. are solely governed by the planned level of activity.

7.5 Setting Standards

Setting standards may also be called developing standards or establishment of standard cost because as a consequence of setting standards for various aspects, the standard cost can be computed. Setting standards is like laying a building foundation. The success of standard costing system depends on the care with which the standards are developed. It is preferable, particularly in large firms, to establish 'Standard committee' which is responsible for determining standards in all aspects of the business and also making suitable revisions in due course. The standard committee usually consists of all the functional managers like purchase, production and sales, and technical experts like the Production Engineer, the General Manager and the Cost Accountant. It is the Cost Accountant's role which is crucial because he has to assign the monetary values for the different standards set by the other experts in each area or function.

The following is a brief discussion on the setting of standards for each element of cost:

Standards for direct material cost

Direct material standards are broadly divided into standards for material usage, also known as quantity standards and standards for material price. There may be several materials used in the production of a product. It is necessary to set standards for each of the important materials.

- Material usage or quantity standards: These standards deal with the quantity of material needed for each unit of finished product, the quality specifications and tolerance like length, breadth, strength, volume, etc. Based on the past experience, the normal loss to be expected has to be determined. Based on the expected or permitted loss, the quantity standard per unit is fixed. It two or more materials are mixed in the production; the standard proportion of each material has to be fixed. The production manager and technical expert play the most important role insetting quantity standards. Their knowledge, experience and the shop floor situation are instrumental in deciding upon the quality and quantity of each material. The following are the usual quantity standards set.
  - Quantity of material per unit of finished product.
  - Standard loss permitted in the production process.
  - The proportion of different materials, if more than one material is used.
  - The yield expected from material.
- Material price standards: Price standards for the material are the most difficult to set because material prices are subject to the market forces. Usually, current market price for each material, the trends observed and the forecasts of the purchasing department are the determining factors.

While fixing price standards, the other terms like trade discounts, freight, credit terms, etc., are also considered. Material price should also include the cost of purchasing and storing including the handling costs. It is customary to prepare a standard 'Bill of Materials' which is a list of all the direct materials to be used and incorporate therein all the standards set for each material so that it acts like a ready reckoner.

Standards for direct labour cost

The two major aspects for which standards are developed relating to labour are: Labour time and Labour rate.

- Labour Time Standards**:** These standards represent the time to be taken by the direct labour in the production of one unit of product or performing a specific operation. It may be determined with the help of :
  - Time and motion study
  - Technical estimates
  - Trial runs
  - Past experience

- Calibre of the workers
- Working conditions.

Since, human factor is involved; the cooperation of workers should be obtained by suitable briefing about the purpose and significance of the exercise. If different kinds of labour have to perform group tasks, standards should also be fixed for labour mix or gang. The most ticklish problem in setting the labour time standards is the provision for idle time. Idle time includes rest pauses, personal needs of the workers, etc. The care with which the idle time standards are fixed determines the level of argument sand quarrels on the production lines.

The following are the usual labour time standards:

- Standard time to be taken for one unit of output.
- Idle time permitted
- Proportion of different kinds of labour, where two or more kinds of workers are involved.

- Labour rate standards: Labour rates are generally governed by agreements with trade unions, the firm's wage policy and incentive systems in use. However, the following factors influence the labour rate standards:
  - Existing, labour rates
  - Rates paid by similar firms
  - Type or kind of labour needed for production
  - Labour laws governing the industry

  Wage rate standards differ for different grades or kinds of labour. The rate is also subject to revision whenever new agreements are concluded with the unions.
- Standards for overhead cost: Overheads are usually segregated into fixed and variable. It is necessary to fix standard overhead rates separately for fixed overheads and variable overheads. Separate rates have to be determined for factory, office, selling and distribution overheads- both fixed and variable. While determining the overhead rates, the factors to be considered are:
  - Standard level of activity
  - Number of units to be produced
  - Labour and machine hours to be worked

  Standard overhead costs - both fixed and variable should be determined.

  Based upon the standard output and standard hours, the overhead rates are finalised.
- Standard output and its standard cost: Once all the cost standards are finalised, it is possible to consolidate them in the shape of 'standard cost for standard output'. The direct material cost per unit, direct wages per unit, fixed and variable overheads per unit can be listed out. The total of all of these represents standard cost per unit. This can be multiplied with the standard output for the budget period or a specified period to ascertain the standard cost of the standard output.
- Standard hour: If a single product is produced in a firm, the output can be expressed in terms of the units of that product. However, several different products may be produced and they may be measured in different units like kgs, Tons, litres, gallons, barrels, etc. Though, all of these can not be expressed in terms of a single measure, it possible to express all of them in terms of 'Time'. Time taken to produce is the common factor for all output. Production, expressed in terms of hours needed to produce them is called 'Standard hours'.

  According to I.C.M.A., England, "Standard hours are a hypothetical hour which represents the amount of work which should be performed in one hour under standard conditions". The 'Standard hour' is very useful is ascertaining overhead variances.
- Revision of standards: Current or short-term standards have to be periodically revised. Long-term or basic standards may be used for longer periods. They may also need revision when the factors affecting the standard change.
  - Revision may be needed in all the following cases:
  - Change in market price of materials
  - permanent change in labour rates

- Major alterations in products or method of production or materials used
- Basic change in product specifications or design
- Errors in setting of the original standards

Both standards costing and estimated costing are predetermined costs. However, the object of standard costing differs. The differences between these two costs are:

Estimated Cost	Standard Cost
It is used as statistical data, and leads to a lot of guess work.	It is scientifically used, and it is a regular system of account based upon estimation and time studies.
Its objects are to as certain "What the cost will be?"	Its object is to ascertain "What the costs should be?"
It gives importance to cost ascertainment for fixing sale price.	It is used for effective cost control and to take proper action to maximise efficiency.
It is used for a specific use, i.e., fixing sale price.	It is a continuous process of costing, and takes into account all the manufacturing processes.
It can be used, where costing is in operation.	It can be used where standard costing is in operation.
It is not accurate. It is an approximation based on past experience.	As it is based on scientific analysis, it is more accurate than the estimated cost.

Table 7.1 Estimated cost and standard cost

The following table illustrates the difference between Historical Cost and Standard Cost:

Historical Cost	Standard Cost
It is an after production recorded cost.	It is a pre-determined cost.
It is, actually, incurred cost.	It is an ideal cost.
As it relates to the past, it is not useful for cost control.	It is a future cost. It can be used for cost control.
It is used to ascertain the profit or the loss incurred during a period.	It is used for the measurement of operational efficiency of the enterprises.

Table 7.2 Historical cost and standard cost

The following table shows the difference between Budgetary Cost and Standard Cost:

Budgetary Cost	Standard Cost
It is extensive in its application, as it deals with the operation of department or business as a whole	It is intensive, as it is applied to manufacturing of a product or providing a service.
Budgets are prepared for sales, production, cash, etc.	It is determined by classifying recording and allocating expenses to cost unit.
It is a part of financial account, a projection of all financial accounts.	It is a part of cost account, a projection of all cost accounts.

Control is exercised by taking into account budgets and actuals. Variances are not revealed through accounts.	Variances are revealed through difference accounts.
Budgeting can be applied in parts.	It cannot be applied in parts.
It is more expensive and broad in nature, as it relates to production, sales, finance, etc.	It is not expensive because it relates to only elements of cost.
Budgets can be operated with standards.	This system cannot be operated without budgets.

Table 7.3 Budgetary cost and Standard cost

Standard costing is a system of accounting in which all expenses (fixed and variable) are considered for the determination of standard cost for a prescribed set of working conditions. On the other hand, marginal costing is a technique in which only variable expenses are taken to ascertain the marginal cost. Both standard costing and marginal costing are completely independent of each other and may be installed jointly. This system of joint installation may be named as Marginal Standard Costing or Standard Marginal Costing System. Variances are calculated in the same way as in standard costing system with the only difference that volume variances are absent because fixed expenses are charged in totals in each period.

7.6 Standard Costing and Standardised Costing

The term 'standardised costing' is synonymous to uniform costing. Uniform costing is a system of costing under which several undertakings use the same costing principles and practices. With the help of uniform costing, several common processes of various industrial units can be standardised which will be helpful in improving the performance of inefficient units. Both standard costing and standardised costing (i.e. uniform costing) can be used for better management of industrial units.

When all the standard costs have been determined, a Standard cost card is prepared for each product or service. The process of setting standards for materials, labour and overheads results in the establishment of the standard cost for the product. Such a cost card shows for a specified unit of production, quantity, quality and price of each type of materials to be used, the time and the rate of pay of each type of labour, the various operations the product would pass through, the recovery of overhead and the total cost. The build-up of the standard cost of each item is recorded in standard cost card. These details serve as a basis to measure the efficiency against which actual quantities and costs are compared. The type of standard cost card varies with the requirements of individual firms; hence no uniform format can be prescribed.

Summary

- Cost control is a basic objective of cost accountancy.
- Standard costing fulfils the need to compensate the short comings of Historical costing from the point of view of cost control.
- Standard costing is a costing technique specifically evolved to provide complete 'Infrastructure' and 'Systematic approach' for cost control.
- Standard cost is pre-determined cost or forecast estimate of cost.
- Standard costing is universally recognised as a powerful cost control system.
- Variance analysis can determine the persons responsible for each variance.
- Standard Costing is a control device.
- The standard-cost process is mostly used to control the operating tasks.
- Cost centres divide an entire organisation into convenient parts for costing purpose.
- There can be significant difference in the standards set depending on the base used for them.
- Capacity of operation or level of activity expected over a future period is vital in fixing the current or short-term standards.
- Labour rates are generally governed by agreements with trade unions, the firm's wage policy and incentive systems in use.
- Wage rate standards differ for different grades or kinds of labour.
- Based upon the standard output and standard hours, the overhead rates are finalised.
- The total output of a firm comprising different products is expressed in the form of standard hours and the fixed and variable overhead rates are set for standard hours.
- Marginal costing is a technique in which only variable expenses are taken to ascertain the marginal cost.
- Uniform costing is a system of costing under which several undertakings use the same costing principles and practices.
- The process of setting standards for materials, labour and overheads results in the establishment of the standard cost for the product.
- The type of standard cost card varies with the requirements of individual firm hence no uniform format can be prescribed.
- The build-up of the standard cost of each item is recorded in standard cost card.
- With the help of uniform costing, several common processes of various industrial units can be standardised.
- Variances are calculated in the same way as in standard costing system with the only difference that volume variances are absent because fixed expenses are charged in totals in each period.
- The 'Standard hour' is very useful is ascertaining overhead variances.
- Time taken to produce is the common factor for all output.

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Self Assessment

1. _____ is the most powerful system ever invented for cost control.
   a. Norms
   b. Standard costing
   c. Variance
   d. Accounting

2. Which of the following statement is false?
   a. Standard cost is a predetermined estimate of cost to manufacture a single unit or a number of units of a product during a future period.
   b. Standard costing fulfils the need to compensate the short comings of historical costing from the point of view of cost control.
   c. Standard costing fulfils the need to compensate the short comings of historical costing from the point of view of cost control.
   d. The actual costs never lose their relevance after that any accounting period.

3. Which of the following is not included in the technique of standard cost study?
   a. Use of standard costs
   b. Find out and analyse reasons for accounts
   c. Pre-determination of standard costs
   d. Reporting to management for proper action to maximise efficiency

4. Which of the following is not the advantage of standard costing?
   a. Cost control
   b. Norms
   c. Fixing responsibility
   d. Expensive

5. Which of the following is one of the advantages of standard costing?
   a. It is costly.
   b. Inefficient staff is incapable of operating this system.
   c. Measures the extent of the inefficiency.
   d. It is difficult to ascertain correct variance.

6. A _____is a location, person or item of equipment for which costs may be ascertained and used for the purpose of cost control.
   a. production site
   b. cost centre
   c. variance
   d. costing purpose

7. Which of the following standard reflect the best performance on every aspect?
   a. Current standards
   b. Basic standards
   c. Normal standards
   d. Ideal standards

8. _____ is defined as the average standard which, it is anticipated can be attained over a future period of time, preferably long enough to cover one trade cycle.
   a. Current standards
   b. Basic standards
   c. Normal standards
   d. Ideal standards

9. Which of the following is also called as developing standards?
   a. Setting standards
   b. Expected standards
   c. Cost standards
   d. Limiting standards

10. _____ are generally governed by agreements with trade unions, the firm's wage policy and incentive systems in use.
   a. Labour rates
   b. Standard time
   c. Labour laws
   d. Overheads

Chapter VIII

Marginal Costing

Aim

The aim of this chapter is to:

- introduce marginal costing
- explain the applications of marginal costing
- elucidate the cost-volume-profit analysis

Objectives

The objectives of this chapter are to:

- explain absorption costing
- explicate the difference between marginal and absorption costing
- elucidate break-even charts

Learning outcome

At the end of this chapter, you will be able to:

- understand the important concepts of cost volume profit analysis
- identify the graph used to explain the break-even analysis
- recognise the types of break-even charts

8.1 Introduction

Marginal costing is not a method of cost ascertainment like job costing or contract costing. Marginal costing is a technique of costing, which may be used with other methods of costing such as job and process costing. For decision-making, it is more helpful to the management. The other names for marginal costing are direct costing, differential costing, incremental costing and comparative costing. In marginal costing, only variable items of costs are taken into account. These variable costs will change in direct relation to the change in the volume of production or change in the production by one unit. As such, variable costs are called product costs and are charged to production. Fixed costs are not allocated to cost unit; and these are charged directly to profit and loss account during the period and are called as period costs or capacity costs.

Marginal cost is the additional cost of producing an additional unit of a product. Marginal cost is defined by I.C.M.A, London as 'the amount at any given volume of output by which aggregate costs are changed if the volume of output is increased or decreased by one unit. In practice, this is measured by the total variable costs attributable to one unit". Marginal costing is also defined as "the ascertainment of marginal costs and of the effect on profit of changes in volume or type of output by differentiating between fixed costs and variable costs."

8.1.1 Application of Marginal Costing

Marginal costing is the most powerful and popular technique in aid of managerial decision making. As already seen, it reveals the cost, volume-profit relationship in all its ramifications which is useful in profit planning, selling price determination, selection of optimum volume of production, etc. Marginal costing, with its focus on variability of costs and avoidance of overhead apportionment, is so versatile that it is applied in varied circumstances and to tackle divers' problems by hose in charge of such situations. The following are some of the more popular areas of application of marginal costing:

- Key factor (or) Limiting factor
- Make or buy decision
- Fixation of selling prices
- Export decision
- Sales mix decision
- Product elimination decision
- Plant merger decision
- Plant purchase decision
- Further processing decision
- Shut down decision

The above list is not exhaustive. There are numerous situations suitable for applying the principles of marginal costing and the situations chosen above are only a few of the popular areas of application of marginal costing.

8.2 Absorption Costing

Absorption costing is the practice of charging all costs, both fixed and variable to operations, process or products. In marginal costing, only variable costs are charged to productions.

The Institute of Cost and Management Accountants (U.K.) defines it as, "the practice of charging all costs, both variable and fixed to operations, processes or products". This explains why this technique is also called full costing. Administrative, selling and distribution overheads as much form part of total cost as prime cost and factory burden. The following table shows the differences between Absorption costing and Marginal costing.

	Absorption Costing	Marginal Costing
Charging of costs	Fixed costs form a part of total costs of production and distribution	Variable costs alone form a part of cost of production, and sales, whereas fixed cost is charged against contribution for determination of profit.
Valuation of stocks	Stocks and work-in progress are valued at both fixed and variable costs, i.e., total costs.	Stocks are valued at variable cost only.
Variation in profits	When there is no sale the entire stock is carried forward and there is no trading profit or loss.	If there is no sale, the fixed overhead will be treated as loss in the absence of contribution. It is not carried forward as part of stock value.
Purpose	Absorption costing is more suitable for long-term decision making and for pricing policy over long term.	Marginal costing is more useful for short-term managerial decision making.
Emphasis	Absorption costing lays emphasis on production.	Marginal costing emphasizes selling and pricing aspects.

Table 8.1 Difference between Absorption Costing and Marginal Costing

8.3 Costs-Volume Profit Analysis

As the term itself suggests, the cost-volume-profit (CVP) analysis is the analysis of three variables, viz., cost, volume and profit. In CVP analysis, an attempt is made to measure variations of costs and profit with volume. Profit as a variable is the reflection of a number of internal and external conditions which exert influence on sales revenue and costs.

The cost volume profit analysis helps or assists the management in profit planning. In order to increase the profit, a concern must increase the output. When the output is at maximum, within the installed capacity, it adds to the contribution. In the words of Heiser, "The most significant single factor in profit planning of the average business is the relationship between the volume of business, costs and profit."

Thereby, cost volume profit analysis is the relationship among cost, volume and profit. When volume of output increases, unit cost of production decreases, and vice versa; because the fixed cost remains unaffected. When the output increases, the fixed cost per unit decreases. Therefore, profit will be more, when sales price remains constant. Generally, costs may not change in direct proportion to the volume. Thus, a small change in the volume will affect the profit.

The management is always interested in knowing that which product or product mix is most profitable, what effect a change in the volume of output will have on the cost of production and profit, etc. All these problems are solved with the help of the cost-volume-profit analysis.

To know the cost volume profit relationship, a study of the following is essential:

- Marginal cost analysis
- Break-even analysis
- Profit volume ratio
- Profit graph
- Key factor
- Sales mix

8.4 Important Concepts of Cost-Volume-Profit Analysis

The important concepts of cost-volume-profit analysis are as follows:

Fixed cost

It is the total of all those costs which are termed as 'Period costs' or 'Time costs'. They do not depend on the volume of production and sales. They must be incurred irrespective of the actual activity or operations. Examples: Office rent, Factory rent, Manager's salary, etc., i.e., fixed overheads. The fixed costs do not normally change up to the full capacity of a firm. So unless otherwise mentioned, between '0' and '100%' of a firm's capacity, fixed cost remain constant. Fixed cost is fixed in total, but variable in per unit.

Variable costs

These are the costs which increase or decrease in proportion to the output and sales. Variable costs are called 'Product costs' or 'Marginal costs'. Usually, they vary in direct proportion to the output. They include all the direct costs, i.e., direct material, direct wages, direct expenses and variable overheads. The variable costs vary in total, but they remain constant per unit. Variable costs or marginal costs are the focal point in the application of marginal costing as a technique.

Contribution

Contribution is the difference between sales and marginal cost. It is the contribution towards fixed costs and profit. In marginal costing technique, contribution is a very important concept as it is used to find the profitability of products, processes ,departments and divisions. Practically all the decisions are based on, and also oriented towards contribution.

Contribution is different from the profit which is the net margin remaining after reducing fixed expenses from the total contribution. Contribution can be ascertained in the ways given below:

Contribution = Selling price – Marginal cost

Contribution = Fixed expenses + Profit

Profit = Contribution – Fixed expenses

Contribution to sales $\left(\frac{C}{S}\right)$(or) P/V (Profit Volume) ratio

This is the ratio of contribution to sales. It is an important ratio analysing the relationship between sales and contribution. A high P/V ratio indicates high profitability and low P/V ratio indicates low profitability. This ratio helps in comparison of profitability of various products. Since high P/V ratio indicates high profits, the objective of every organisation should be to improve or increase the P/V ratio.

P/V Ratio can be improved by:

- Decreasing the variable cost by efficiently utilising material, machines and men.
- Selecting most profitable product mix for production and sales.
- Increasing the selling price per unit.

Formula for P/V Ratio

$$\text{P/V Ratio} = \frac{\text{Contribution}}{\text{Sales}} = \frac{C}{S}$$

(or)

$$= \frac{\text{Sales} - \text{VariableCost}}{\text{Sales}} = \frac{S-V}{S}$$

(or)

$$= \frac{\text{Fixedcost} + \text{Profit}}{\text{Sales}} = \frac{F+P}{S}$$

When two periods' profits and sales are given, the P/V ratio is calculated as given below:

$$\text{P/V Ratio} = \frac{\text{Change in Profit}}{\text{Change in Sales}}$$

Break-even analysis and break-even point

Break-even analysis is a method of studying relationship between revenue and costs in relation to sales volume of a business enterprise and determination of volume of sales at which total costs are equal to revenue. According to Matz Curry and Frank "a break-even analysis determines at what level cost and revenue are in equilibrium". Thus, break-even analysis refers to a system of determination of that level of activity, where total sales are just equal to total costs. This level of activity is generally termed as break-even point (B.E.P.). At the break-even point a business man neither earns any profit nor incurs any loss. Break-even point is also called "No profit, no loss point" or "Zero profit & zero loss point".

Formula for calculating break-even point

Break-even point (in units)

$$= \frac{\text{Fixed expenses}}{\text{Selling price per unit Marginal cost per unit}}$$

(or)

$$\frac{\text{Fixed cost}}{\text{Contribution per unit}}$$

(or)

$$\frac{\text{Break even sales value}}{\text{Selling price per unit}}$$

Break-even point (in rupees) (or) Break-even sales value

Break-even sales value = Break-even point in units x Selling price per unit

$$\text{(or)} = \frac{\text{Fixed cost}}{\text{P/V Ratio}} = \frac{F}{P/V}$$

Break-even ratio: Break-even ratio is the ratio between break-even sales and actual sales of a business concern. Break-even ratio is ascertained by the following formula:

$$\text{Break-even ratio} = \frac{\text{Break even sales}}{\text{Actual sales}} \times 100$$

Composite Break-even point

This is the combined break-even point or overall break-even point of a concern calculated only when a business concern makes two or more products. The composite break-even point is calculated by the following formula:

$$\text{Composite break-even point in value} = \frac{\text{Total fixed cost}}{\text{Composite P/V Ratio}}$$

Composite P/V ratio = Individual P/V Ratio x % of each product to total sales

Beak even capacity or Capacity Break-even point: This is expression of break-even point as percentage of capacity.

$$\text{Capacity B.E.P.} = \frac{\text{B.E.P. in units}}{\text{Total capacity in units}} \times 100$$

(or)

$$\frac{\text{Break even point in rupees}}{\text{Total capacity in rupees}} \times 100$$

Margin of safety

Break-even analysis includes the concept of margin of safety. Margin of safety is the difference between actual sales and break-even sales. Margin of safety is calculated in rupees, units or even in percentage form. Margin of safety indicates the value/volume of sales which directly contribute to profit, as fixed costs have already been recovered at break-even point. Margin of safety is calculated by the following formula:

Margin of Safety = Actual sales – Break-even sales

$$\text{(or)} = \frac{\text{Profit}}{\text{P/V Ratio}} = \frac{\text{P}}{\text{P/V}}$$

Margin of safety ratio: Sometimes margin of safety is expressed as a ratio. It is the ratio of margin of safety to actual sales.

$$\text{Margin of safety ratio} = \frac{\text{Margin of safety}}{\text{Actual sales}} \times 100$$

Angle of incidence

In graphic presentation of marginal cost data, i.e., a break-even chart, the total cost line and sales line cross each other. The point of their crossing is termed 'Break-even point'. The angle at which the sales line crosses the total cost line is called the 'Angle of incidence'. The bigger is the angle, the more will be the contribution and profit with every additional sale. Firms with higher P/V ratio and comparatively less variable costs have a higher angle of incidence. Such firm can magnify their profits in high demand conditions. The angle of incidence at a glance can signify or reveal the ability of a firm to earn higher profits with every increase in sales.

8.5 Break-even Charts (B.E.C)

The technique of break-even analysis can be made easy with the help of graph or mathematical formula. Graphical representation of break-even point is known as the break-even chart. Dr. Vance states that, "it is a graph showing the amount of fixed variable costs and the sales revenue at different volumes of operation. It shows at what volume the firm first covers all costs with revenue of break-even". B.E.C. show the profitability or otherwise of an undertaking at various levels of activity, and indicates the point at which neither profit nor loss is made .Break-even point is known as "no profit, no loss point", so the chart is also known as break-even chart. At this point, the total costs are recovered and profit begins.

Advantages of break-even charts

- Total cost, variable cost and fixed cost can be determined.
- B.E. output or sales value can be determined.
- Cost, volume and profit relationship can be studied, and they are very useful to the managerial decision-making.
- Inter-firm comparison is possible.
- It is useful for forecasting plans and profits.
- The best products mix can be selected.
- Total profits can be calculated.
- Profitability of different levels of activity, various products or profit, i.e., plant can be known.
- It is helpful for cost control.

Limitations of break-even charts

B.E.C. is constructed under some unrealistic assumptions.

- Constant selling price is not true.
- Detailed information cannot be known from the chart. To know all the information about fixed cost, Variable cost and Selling price, a number of charts must be drawn.
- No importance is given to opening and closing stocks.
- Various product mix on profits cannot be studied as the study is concerned with only one sales mix or product mix.
- If the business conditions change during a period, the B.E.C. becomes out of data as it assumes no change in business condition.

Types of break-even charts

From the point of view of methods of preparation and purpose for which the chart is prepared, break-even chart may be various types. Normally, following types are the most commonly used types of chart.

- Simple break-even chart
- Contribution break-even chart
- Profit break-even chart
- Profit chart for product-wise analysis
- Cash break-even chart
- Control break-even chart

Illustration I:

From the following particulars given below, find out the B.E.P. What will be the selling price per unit if B.E.P. is to be brought down to 9,000 units?

Variable cost per unit	75
Fixed expenses	2,70,000
Selling price per unit	100

Solution:

B.E.P. (in units) $= \frac{\text{Fixedcost}}{\text{Contributionperunit}}$

Contribution = Selling price p.u. – Variable cost p.u.
= Rs.100 – Rs.75 = Rs.25

B.E.P. (in units) = $\frac{2,70,000}{9000}$ = 10,800 units

If break-even point is brought down to 9,000 units, fixed expenses are to be recovered from 9,000 units to have no profit and no loss.

Fixed expenses per unit= $\frac{\text{Fixedexpenses}}{\text{No.ofunits}}$

= Rs.$\frac{2,70,000}{9000}$= Rs. 30

When B.E.P. is 9,000 units, selling price p.u. is calculated as follows:
Selling price = Fixed expenses + Variable expenses per unit.
= Rs.30 + Rs.75 = Rs.105

Illustration II:
An analysis of Lalitha Manufacturing Co. Ltd. led to the following information:

Cost elements	Variable cost (% of sales)	Fixed cost
Direct Material	32.8	
Direct Labour	28.4	
Factory Overheads	12.6	1,89,900
Distribution Overheads	4.1	58,400
Administrative Overheads	1.1	66,700

Budgeted sales are Rs.18,50,000. You are required to determine:

- the break-even sales volume
- the profit at the budgeted sales volume
- the profit, if actual sales
- (a) drop by 10% (b) increase by 5% from budgeted sales.

Solution:
Percentage of variable cost of sales is 79% calculated as follows:

Direct Material	32.8% of sales
Direct Labour	28.4% of sales
Factory Overheads	12.6% of sales
Distribution overheads	4.1% of sales
Administrative overheads	1.1% of sales
Total Variable Cost	79.0% of Sales

Percentage of contribution to Sales = 100 – 79 = 21

P.V. ratio $= \frac{\text{Contribution}}{\text{Sales}} \times 100$

$\frac{21}{100} \times 100 = 21\%$

- Break-evenSales Volume $= \frac{\text{Fixedcost}}{\text{P.V.Ratio}}$

$$= \frac{Rs.\,1,89,9000 + Rs.\,58,400 + Rs.\,66,700}{21\%}$$

$$= 3,15,000 \times \frac{100}{21\%} = \text{Rs. } 15,00,000$$

- Profit at the budgeted sales of Rs.18,50,000:

  Percentage of Contribution to Sales

  = 21

  Contribution at the budgeted sales = 18,50,000 x $\frac{21}{100}$

  Rs. 3,88,500

  Profit = Contribution – Fixed expenses

  = Rs. 3,88,500 - Rs. 3,15,000 = Rs.73,500

- (a) Profit is actual sales drop by 10%

Budgeted sale		= Rs. 18,50,000
Less :	10% decline	= Rs. 1,85,000
Actual Sales		= Rs. 16,65,000
Contribution at 21% of sales $\frac{16,65,000x21}{100}$		= 3,49,650
Less: Fixed expenses		= 3,15,000
Profit		= 34,650

- (b) Profit if actual sales increase by 5% from budgeted sales

Budgeted sale		= Rs. 18,50,000
Less:	10% decline	= Rs. 92,500
Actual Sales		= Rs. 19,42,500
Contribution at 21% of sales $\frac{19,42,500x21}{100}$		= 4,07,925
Less: Fixed expenses		= 3,15,000
Profit		= 92,925

Summary

- Marginal costing is a technique of costing, which may be used with other methods of costing, viz., and job process.
- In marginal costing, only variable items of costs are taken into account.
- Fixed costs are not allocated to cost unit; and these are charged directly to profit and loss account during the period and are called as period costs or capacity costs.
- Absorption costing is the practice of charging all costs, both fixed and variable to operations, process or products. In marginal costing, only variable costs are charged to productions.
- The cost volume profit analysis helps or assists the management in profit planning.
- Cost volume profit analysis is the relationship among cost, volume and profit.
- Fixed cost is fixed in total, but variable in per unit.
- Variable costs or marginal costs are the focal point in the application of marginal costing as a technique.
- Contribution is the difference between sales and marginal cost.
- Contribution is different from the profit which is the net margin remaining after reducing fixed expenses from the total contribution.
- Break-even analysis is a method of studying relationship between revenue and costs in relation to sales volume of a business enterprise and determination of volume of sales at which total costs are equal to revenue.
- At the break-even point a business man neither earns any profit nor incurs any loss.
- Break-even point is also called "No profit, no loss point" or "Zero profit & zero loss point".
- Break-even ratio is the ratio between break-even sales and actual sales of a business concern.
- Break-even analysis includes the concept of margin of safety.
- Margin of safety is the difference between actual sales and break-even sales.
- Margin of safety indicates the value/volume of sales which directly contribute to profit, as fixed costs have already been recovered at break-even point.
- Graphical representation of break-even point is known as the break-even chart.
- The technique of break-even analysis can be made easy with the help of graph or mathematical formula.
- Margin of safety indicates the value/volume of sales which directly contribute to profit, as fixed costs have already been recovered at break-even point.

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Self Assessment

1. Which of the following is not called as marginal costing?
   a. Comparative costing
   b. Variance costing
   c. Direct costing
   d. Differential costing

2. _____ is a technique of costing, which may be used with other methods of costing.
   a. Break-even analysis
   b. Break-even point
   c. Marginal costing
   d. Absorption costing

3. Which of the following is not one of the applications of marginal costing?
   a. Fixation of selling prices
   b. Export decision
   c. Sales mix decision
   d. Sales of fixed cost

4. _____ is the practice of charging all costs, both fixed and variable to operations, process or products.
   a. Break-even analysis
   b. Break-even point
   c. Marginal costing
   d. Absorption costing

5. The _____ analysis is the analysis of three variables, viz., cost, volume and profit.
   a. absorption
   b. cost-volume-profit
   c. break-even
   d. ratio

6. Which of the following is not one of the important concepts of cost volume profit analysis?
   a. Fixed cost
   b. Variable cost
   c. Contribution
   d. Profit

7. _____ is the difference between sales and marginal cost.
   a. Contribution
   b. Variable cost
   c. Fixed cost
   d. P/V ratio

8. _____ is a method of studying relationship between revenue and costs in relation to sales volume of a business enterprise and determination of volume of sales at which total costs are equal to revenue.
   a. Break-even analysis
   b. Break-even point
   c. Marginal costing
   d. Absorption costing

9. Which of the following is also known as no profit, no loss point?
   a. Variable cost
   b. Fixed cost
   c. Break-even point
   d. Absorption costing

10. Margin of safety is the difference between _____ and break-even sales.
   a. actual sales
   b. variable cost
   c. fixed cost
   d. absorption cost

Case Study I

Marginal Cost-Based Pricing of Distribution

Electricity North West (ENW) network delivers electricity to around 2.3 million customers in the north-west of England. The EPP software was tested on the model of the entire EHV network consisting of a significant chunk of the 400kV and 275kV transmission networks, 132kV and 33kV networks down to 11(6.6)kV bus bars. This network has around 3,000 nodes and more than 5,000 branches.

In this paper, pricing results for a "typical" distribution network supplied from a single GSP is presented. The network comprises of around 300 nodes, out of which 60 are secondary sides of primary substations. The first comparative analysis is done for DICRP and Original NG ICRP charges (Figure 1) and it clearly indicates quite flat NG ICRP prices and higher charge differentials for the DICRP model. The letter model produces near-zero charges in areas with no reinforcements, and higher charges in congested areas. The range of variation is greater in areas, where distributed generation is connected. Pricing results typical for the LRIC model are shown in the Figure. Extremely high charges are presented in congested areas leading to large cost over-recovery (Fig. 2a). Inverse proportionality of NMCs with flow growth rate is demonstrated in Fig. 2b, showing the perverse incentive inherently built into the LRIC model.

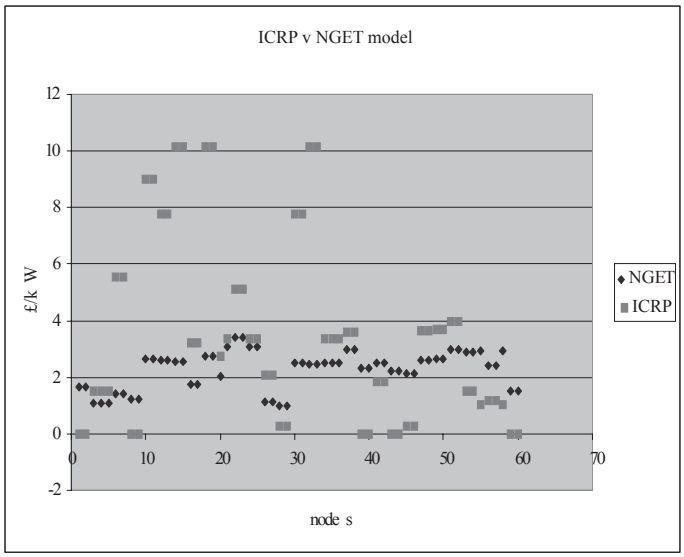

Fig. 1 Comparison of ICRP and NGET model results

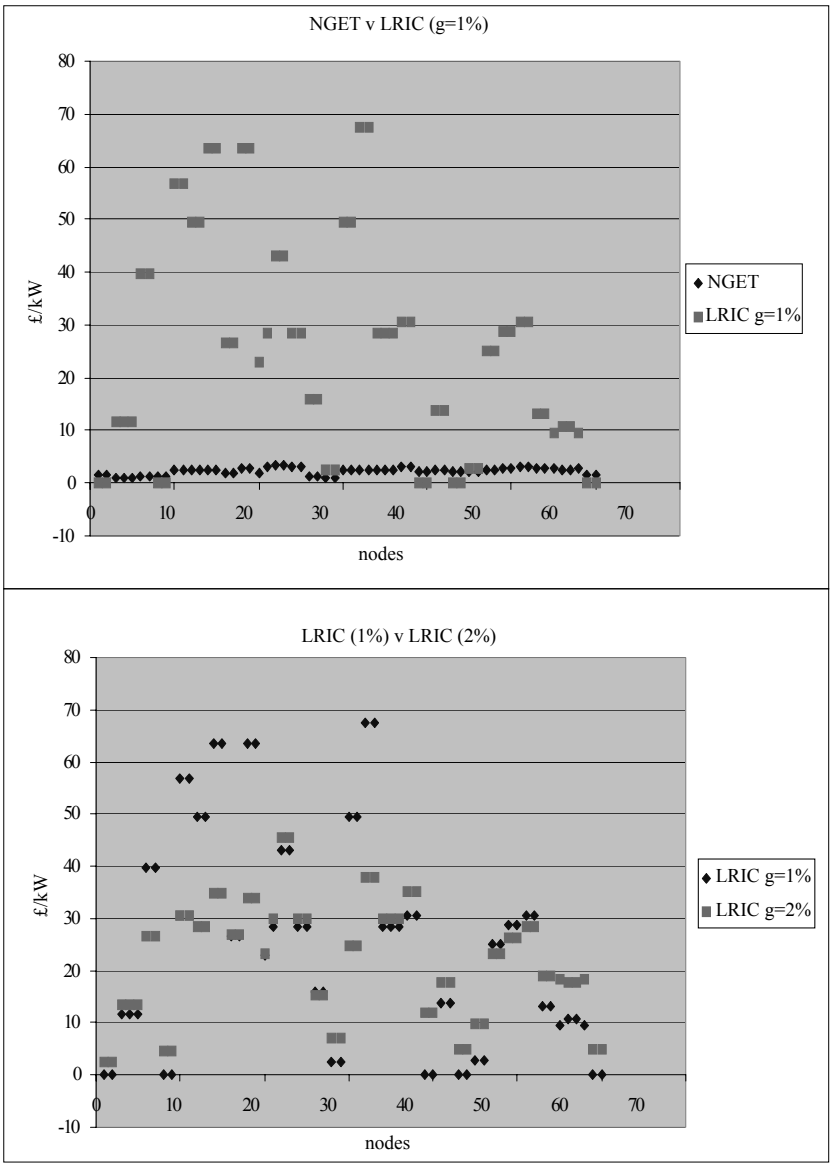

Fig. 2 a) LRIC v NGET; b) LRIC for 2 flow growths

Finally, essential features of the General and Combined models are shown in Fig. 3. User-defined setting k can only scale ICRP term in the General model giving relatively small variation of the total charges (Fig. 3a). On the other hand, NMCs can be very well controlled with the aid of this parameter within the Combined model (Fig. 3b).

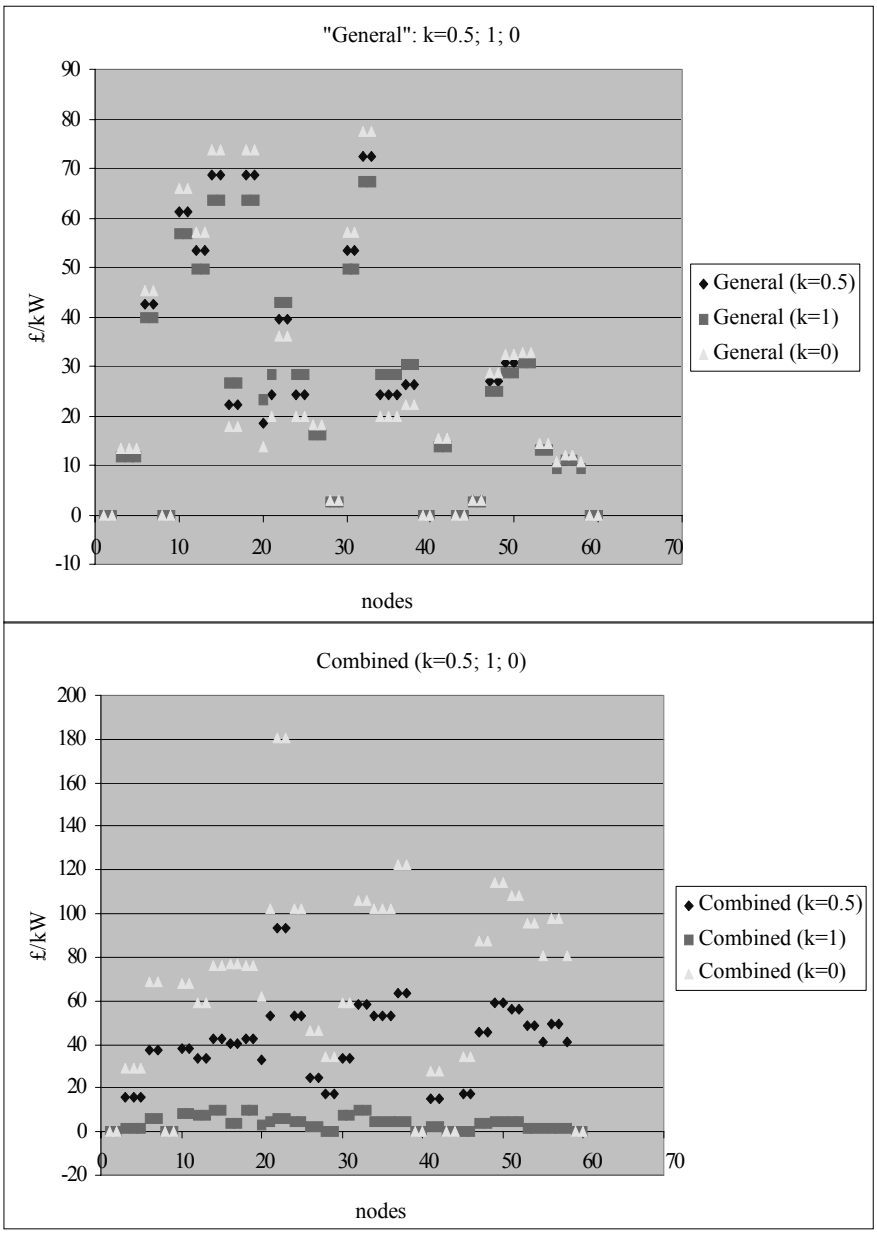

Fig. 3 a) LRIC v NGET; b) LRIC for 2 flow growths

Conclusion

Several pricing models for calculating the distribution use of-system charges have been developed by applying different assumptions to a single cost equation. All models were tested on the large-scale EHV network and the main model features are presented below.

Two types of ICRP models are studied and in both models customers are charged in proportion to the relative asset capacity usage. Those customers with power flow in the same direction as the net flow are charged for the asset, while the customers who reduce power flow are rewarded. The total discounted reinforcement costs are smeared across all branches in the NG ICRP model and the nodal charge differentials are usually very modest. Charge differentials are driven by the incremental constants, which are, in turn, driven by the reinforcements in individual asset categories. On the other hand, DICRP charges are more locational in nature and nodal charge differentials can be greater particularly, where heavily congested areas exist. Both ICRP models generally under-recover incurred reinforcement costs.

In the LRIC models, customers are again either charged or rewarded depending whether they contribute to or reduce the net power flow in an asset. However, the charges are now inversely proportional to the branch flow growth rate. As the time to reinforcement is also dependent on the flow growth rate, it can be shown that the NMC-flow growth function has an extreme point, which indicates that a NMC can either increase or decrease with the increase of the flow growth rate. In all the cases studied, LRIC model has produced high charges and large over-recovery of total reinforcement costs. The results are very susceptible to the changes in the forecast growth rates and even more to the structural changes of the network.

IICRP charges consist of ICRP and LRIC terms, where the letter is dampened by the ratio of the critical power flow to the asset rating. The resulting profile can be quite different from any of them, in particular when different growth rates are used. Particularly high charges, charge differentials and cost over-recovery are obtained in areas, where power flows are close to the limits.

The General model is a linear combination of the LRIC and the IICRP and the user defined parameter k can only be used to adjust the ICRP term. Large cost over-recovery due to LRIC term can only be avoided if a separate multiplier is applied to the LRIC term. Many of the features are similar to the IICRP model.

Different cost allocation principles are applied to two cost terms of the combined model. The first term is allocated only to those customers who invoke positive power flow (i.e., the same orientation as the net flow) in an asset. If the user defined parameter k is set to unity, the customers are only charged for the asset costs (there are no rewards) and the recovered cost matches the reinforcement cost. Decreasing the parameter k strengthens the economic signals and the LTIC term can be well controlled. Generation and load connected at the same node have different nodal charges and relatively smaller charge differentials can be obtained by careful selection of parameter k.

(Source: *Marginal Cost-Based Pricing of Distribution* [Pdf] Available at: <http://strathprints.strath.ac.uk/14820/1/CIRED2009_0503_Paper.pdf> [Accessed 31 May 2013]).

Questions

1. What do high charges in the congested areas lead to?

   Answer

   It leads to large cost over-recovery.

2. What is General model?

   Answer

   The General model is a linear combination of the LRIC and the IICRP and the user defined parameter k can only be used to adjust the ICRP term.

3. What are charge differentials driven by?

   Answer

   Charge differentials are driven by the incremental constants.

Case Study II

Cost Control- Tarrant Manufacturing Co. Inc.

Background

Tarrant Manufacturing Company, Inc. began its operations in 1910 in Saratoga Springs, New York producing road maintenance equipment. Today, Tarrant continues to produce high-quality highway maintenance equipment including a full line of salt and sand spreaders, vacuum leaf loaders, and catch basin cleaners.

In 1999, Kathy Tarrant, the Treasurer of the company, saw a considerable increase in the cost of electricity for the plant that could not be explained by changes in the production levels or equipment. When contacted, the utility company agreed to test the accuracy of the two electric meters for the plant, but its tests showed the meters to be accurate. The utility company also installed advanced metering equipment to measure demand and consumption in 15- minute intervals. This metering data produced reams of paper, but still no explanation for the increased costs that were now averaging over $1,000 per month.

Solutions

At the suggestion of their public accounting firm, Tarrant called Cost Control Associates and requested a complete review under the Cost Recovery and Reduction™ program. Using its proprietary software, Cost Control Associates performed a complete analysis of past bills and quickly found the problem – the utility company had changed the rate on the account.

Rather than each of the plant's two meters being billed under separate accounts, readings from the two meters were totalled and billed under a single utility account. While the combined billing would normally result in customer service charge savings, in this particular case, it caused a demand threshold to be reached that triggered a change to a higher cost rate in 1999.

Results

Cost Control Associates filed a request with the utility company to have the two meters billed under separate accounts at the lower cost rate and to have a refund issued for the higher costs incurred since the 1999 rate change. After the utility company denied the claim, Cost Control Associates presented the case to the Public Service Commission.

After several rulings by the Public Service Commission, the utility company finally agreed to make the refund and change the billing to the lower-cost rate. According to Kathy Tarrant, "it was not only the value of the $57,000 refund that was important, it was also the $14,000 per year that we will be saving each and every year that makes a real difference".

(Source: *Cost Control- Tarrant Manufacturing Co. Inc* [Pdf] Available at: <http://www.costcontrolassociates.com/pdfs/Case%20Study-Tarrant%20Manufacturing.pdf> [Accessed 31 May 2013]).

Questions

1. When was Tarrant Manufacturing Company started?
2. What will combined billing result in?
3. What was the problem faced by Tarrant Manufacturing Company?

Case Study III

Riverside Leisure Centre

Introduction

The Riverside leisure centre opened in 1973 with a leisure pool, sports hall, 4 squash courts and changing rooms. June West is the new and very ambitious manager. Squash courts 1 and 2 have been recently refurbished and are fully booked most of the day. The other two squash courts next to the fitness room are now in urgent need of repair and are rarely booked. The fitness room is too small. It is clear that the leisure centre is losing members because the fitness room is too busy. Other leisure centres locally are reporting a big increase in membership of their fitness rooms. June believes it is important to increase the size of the fitness room by incorporating one or both of the squash courts that is rarely booked. Laura is the management accountant for the leisure centre and she has been asked to evaluate the alternative proposals.

Proposals

Alternative 1- Incorporate squash court No. 4

- Increase the size of the fitness room by incorporating squash court 4. This would increase the size of the fitness room from 2,200 sq. ft to 2,700 sq. ft.
- Squash court 3 would remain and it would be refurbished immediately.

Alternative 2 - Incorporate squash courts 3 and 4

- Increase the size of the fitness room by incorporating squash courts 3 and 4. This would increase the size of the fitness room from 2,200 sq. ft to 3,200 sq. ft.

Capital costs

The capital costs of the alternatives include building works, services, equipment, and professional fees. Estimates are given below:

Building works

	Alternative 1	Alternative 2
Doors	£1,100	£1,100
Remove existing walls	£2,200	£3,600
New ceilings	£1,900	£3,200
Fire exit	£3,300	£3,600
Decoration	£7,100	£10,600
Total	£15,600	£22,100

Services

	Alternative 1	Alternative 2
Electrical	£4,000	£5,700
Lighting	£2,000	£3,200
Air conditioning	£14,000	£12,000
Total	£20,000	£20,900

Equipment

	Alternative 1	Alternative 2
Cardio-vascular machines (bikes, rowers)	£38,000	£78,000
Cardio theatre	£7,000	£7,800

Drinking fountain	£1,100	£1,100
Total	£46,100	£86,900

A residual figure at the end of 6 years was estimated at £6,000 for alternative 1 and £9,000 for alternative 2.

Professional fees and charges
Professional fees and charges have been estimated at £6,000. (This cost will be incurred as soon as a decision is made)

Annual costs
The management wants to appoint only one permanent member of staff and then increase the number of casual staff at peak times. A nominal estimate for utilities and cleaning costs has been included in the costings as these costs are not expected to change significantly. The maintenance and repair contracts are for the first year only and the suppliers will not commit themselves to providing estimates after the first year. An estimate for the costs is given below:

	Alternative 1	Alternative 2
Permanent staff	£19,000	£19,000
Casual staff	£8,000	£12,000
Utilities	£1,400	£1,800
Maintenance contracts	£8,200	£12,200
Cleaning and other	£2,100	£2,100

The cost of advertising the new facilities at the leisure centre is estimated at £15,000 in the first year. June believed an aggressive advertising policy was essential to ensure the project was a success. No estimate for advertising was considered for later years.

Estimating additional annual revenue for fitness room (two different approaches are to be considered)

- June: She has suggested that additional revenue should be estimated by dividing the current income of £180,000 by 2,200 sq. ft to determine income per sq. ft. The income per sq. ft. is assumed to remain constant as the size of the fitness room is increased. Basing the income on square footage is seen as a simple, but accurate way of estimating future income.
- Laura: Laura suggested a different approach. She suggested that managers should use a probability distribution based on the judgement of all the senior managers to estimate the total revenue for the fitness room. After much discussion Laura was able to suggest the following probability distribution:

		Alternative 1
State of World	Total annual revenue for the fitness room.	Probability %
I - The fitness room will be an initial success, but very few new members will be attracted. Usage will vary throughout the year.	£210,000	20%
II - The fitness room will be very successful initially, but then membership will slowly fall. Usage will be seasonal.	£225,000	50%
III - The fitness room will be very successful. A lot of new members will be attracted and as existing members become more health conscious they will use the room throughout the year.	£250,000	30%

		Alternative 2
State of World	Total annual revenue for the fitness room.	Probability %
I - The fitness room will be an initial success, but very few new members will be attracted. Usage will vary throughout the year.	£240,000	50%
II - The fitness room will be very successful initially, but then membership will slowly fall. Usage will be seasonal.	£250,000	40%
III - The fitness room will be very successful. A lot of new members will be attracted and as existing members become more health conscious they will use the room throughout the year.	£270,000	10%

(The additional revenue equals the total revenue calculated above less the existing revenue of £180,000).

Cost of capital
Laura suggests that it is appropriate to use a cost of capital of 7% for this project.

Life of project
The life of the project was discussed at some length by the senior management. June wanted to assume that the equipment had a life of 6 years, but a more conservative estimate of 5 years was proposed by John Jones who had experience of a similar project at a different leisure centre. Laura suggested that a project life of 4 years should also be considered, but this was quickly dismissed by June. There was no agreement over what was a suitable life for the project and it was agreed that given the technological advance within the industry more information was required.

(Source: *Riverside Leisure Centre* [Pdf] Available at: <http://fba.aiub.edu/pages/files/cs/acc/ACC110004.pdf > [Accessed 31 May 2013]).

Questions
1. Estimate the sensitivity of the investments and make a clear recommendation on financial grounds to accept or reject the investments.
2. Identify and evaluate any additional information that is not included in this case study.
3. Evaluate the different approaches described by June and Laura to forecasting income for the investments.

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Self Assessment Answers

Chapter I

1. b
2. d
3. c
4. d
5. b
6. c
7. b
8. b
9. d
10. a

Chapter II

1. d
2. a
3. a
4. d
5. b
6. b
7. a
8. b
9. b
10. a

Chapter III

1. d
2. b
3. d
4. d
5. a
6. c
7. a
8. d
9. a
10. b

Chapter IV

1. a
2. b
3. a
4. c
5. b
6. d
7. c
8. d
9. a
10. a

Chapter V

1. c
2. c
3. b
4. d
5. b
6. d
7. d
8. a
9. d
10. b

Chapter VI

1. d
2. a
3. d
4. b
5. b
6. a
7. c
8. d
9. b
10. a

Chapter VII

1. b
2. d
3. b
4. d
5. c
6. b
7. d
8. c
9. a
10. a

Chapter VIII

1. b
2. c
3. d
4. d
5. b
6. d
7. a
8. a
9. c
10. a