Accounting For Management-105

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STRUCTURE

1.1. INTRODUCTION TO ACCOUNTING

In this chapter first of all meaning of accounting is given then objectives and functions of accounting are explained. Next are the concepts and conventions used by accountants and at the end Double Entry System of accounting is given with its rules, advantages and disadvantages.

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 civilization, the number of transactions to be recorded were so small that each businessman was able to record and check for himself the recorded transactions. However, the modern system of accounting based on Principles of Double Entry owes its origin to Luco Pacioli who first published the principles of Double Entry System in 1494 at Venice in Italy. In recent years large scale production, cut throat competition, widening of the market, changes in the technology have brought changes in the field of accounting.

1.1.1. Meaning of Accounting

The main purpose of accounting is to ascertain profit or loss during a specified period, to show financial condition of the business on the particular date and to have control over the firm's property. Such accounting records are required to be maintained to measure the income of the business and to communicate the information to the concerned parties like managers, owners and the other parties. Accounting is a discipline which records, classifies, summaries and interprets financial information about the activities of a concern so that intelligent decisions can be made about the concern. American Accounting Association defines accounting as "the process of identifying, measuring and communicating economic information to permit forward judgements and decisions by users of the information. Here are

given some features of Accounting:

1. It is an art of recording and classifying business transactions and events.
2. The transactions or events of a business must be recorded in monetary terms.
3. It is an art of making summaries, analysis and interpretation of these transactions.
4. The results of such analysis must be communicated to the persons who are to make decisions or form judgement.

1.1.2. Purpose of Accounting

The basic objective of accounting is to provide information which is useful for persons inside the organization for persons or groups outside the organization.

The main purpose of accounting Is

(i) To ascertain profit or loss during specified period.
(ii) To show financial position of the business on a particular date.
(iii) To have control over the firm's property.
(iv) To keep a systematic and permanent record of all financial transactions of the business.
(v) To keep a track of all changes in the value of assets and liabilities.
(vi) To keep a control on expenses in order to minimize the same.
(vii) It provides information for meeting various legal requirements as income-tax returns, returns for sales tax etc.

1.1.3. Is Accounting A Science Or An Art?

Account is both a science and an art.

Accounting is science because recording, classifying and summarizing of business transactions is done on the basis of certain principles such as principles of double entry system which are universally applicable.

1.1.4. Distinction between Book-keeping & Accounting :

Book-keeping is recording of the financial transactions of a business in a methodical manner so that information on any point in relation to them may be quickly obtained.

Accounting is primarily concerned with the design of the system of records, the preparation of reports based on the recorded data, the interpretation, the reports and finally communicating the result of the interpretation to persons who are interested in such results.

1.2. USERS OF ACCOUNTING INFORMATION

1. External users of Accounting Information :

External users are those groups or persons who are outside the organization for whom accounting function is performed. Following can be the external users of accounting information.

(i) Investors : Those who are interested in investing money in an organization are interested in knowing the financial health of the organization to know how safe the investment already made is and how safe their proposed investment will be. To know the financial health, they need accounting information which will help them in evaluating the past performance and future prospects of the organization.

(ii) Creditors : Creditors (i.e. supplier of goods and services on credit, bankers and other lenders of money) want to know the financial position of concern before giving loans or granting. To know the liquid position, they need accounting information relating to current assets, quick assets and current liabilities which is available in the financial statements.

(iii) Government : Government needs accounting information for compiling statistics concerning business which, in turn helps in compiling national accounts.

(lv) Research scholars : To make a study into the financial operations of a particular firm, the research scholar needs detailed accounting information relating to purchases, sales, expenses, cost of material used, current assets, current liabilities, fixed assets, long term liabilities and shareholders' funds which is available in the accounting records maintained by the firm.

2. Internal users of Accounting Information

Internal users of the accounting information are those persons or groups which are within the organizations. Following are such internal users:

(i) Owners: The owners provide funds for operations of a business & they want to know whether their funds are being properly used or not. They need accounting information to know the profitability & the financial position of the concern in which they have invested their funds.

(II) Management:Accounting information provides "the eye & ears to Management". It is helpful to the Management in fixing reasonable selling prices;selling prices should always be fixed on the basis of accounting data to get the reasonable margin of profit on sales.

(III) Employees**:**Employees seek accounting information to know that the bonus being paid to them is correct.

Self-Check Exercise (True/False)

1. The primary purpose of accounting is solely to calculate profits.

2. Creditors use accounting information to assess a company's ability to meet its short-term obligations.

1.3. SYSTEMS OF ACCOUNTING ORMETHODS TO RECORD BUSINESS TRANSACTIONS

The Following are the main systems of recording business transactions:

(a) Cash System

Under this system, actual cash receipts & actual cash payment are recorded. Credit transactions Eire not recorded at all. The receipts & payment accounts prepared are in case of non-trading concerns such as charitable institutions a club, a school; a college etc. can be cited as the best example of cash system. The system being based on a record of actual cash receipts and actual cash payments will not be able to disclose correct profit or loss for a particular period and will not exhibit true financial position of the business on a particular day.

(b) Mercantile (Accrual) System

In the modern age, it is very difficult to run the business only on cash basis. Under this system all transactions relating to a period are recorded in the books of account i.e. in addition to actual receipts & payments of cash, income receivable & expenses payable are also recorded. The system being based on a complete record of the financial transaction discloses correct profit or loss for a particular period & also exhibits true financial position of the business on a particular day.

This system is generally adopted by the business community to record their transactions. Under this system of recording, following two sub-systems are in practice in the business world:

(i) Single Entry system:Under this system, only one aspect of the transaction is recorded. Like in the transaction of purchase, either purchases are recorded or the party from whom purchases have been made is recorded.

(ii) Double Entry System : This system records both the aspects of the transaction i.e., purchases as well as name of the party from whom the purchase has been made. *

This system has an edge over the simple entry system. Throughout the world, this system of recording the transaction is followed.

(c) Mixed System

Under this system both cash system 66mercantile system are followed. Some records are kept under cash system whereas others are kept under mercantile system.

1.4. BRANCHES OF ACCOUNTING

Accounting can be classified in three branches:

1. Financial Accounting: **The object of financial accounting is to record the business transactions in the books of accounts in order to ascertain the result of business operations for a particular period and financial condition on a particular date.**
2. Cost Accounting: **The object of cost accounting is to find out the cost of goods produced or services rendered by a: business. It also helps the business in controlling the costs by indicating avoidable losses and wastes; and thus helps in keeping the cost at the minimum level.**
3. Management Accounting: The object of management accounting is to supply relevant information at appropriate time to management to enable to take decisions and effect control.

1.5. OBJECTIVES OF ACCOUNTING

Following are the main objectives of Accounting:

1. To ascertain whether the business operations are profitable or not. To achieve this object a statement known as ”Income Statement" or "Profit or Loss Account" is prepared.
2. To ascertain the financial position of business; The statement shows the financial position of a business as at a particular point of time known as "Balance Sheet" or "Position Statement".

1.6. FUNCTIONS OF ACCOUNTING

The main functions of accounting can be given as follows:

(i) It keep a systematic and permanent record of all financial transactions of business.

(ii) It keeps a record of income and expenses, in such a manner so that ret result of business can be quickly known for any period.

(iii) It keeps a record of assets and liabilities in such a way that financial position of the business can be readily seen at any point of time.

(iv) It protects the property of the business by designing such a system of accounting which may be helpful to achieve this purpose.

(v) It keeps a track of all changes in the value of assets and liabilities.

(vi) It keeps control on all changes in the value of assets and liabilities.

(vii) It communicates the result of the business to the various categories of persons as owners, investors, creditors, employees, management, govt. etc.

(viii) It provides information for meeting various legal requirements as income tax returns, return for sale tax etc.

(ix) It helps in making decisions, concerning the acquisition, use and preservation of scarce resources.-

(x) it helps in devising remedial measures for the deviation of actual performance from the planned performance.

1.7. ACCOUNTING CONVENTIONS AND CONCEPTS

In the modern world no business can afford to remain secretive because various parties such as creditors, employees, taxation authorities, investors, public and government etc. are interested about the affairs of the business. The affairs of the business can be studied mainly by consulting final accounts and the balance sheet of particular business. Final accounts and balance sheet are the end product of Book-keeping. Because of the importance of these statements it became necessary for the accountants to develop some principles, concepts and convention which may be regarded as fundamentals of accounting.

1.8. CONVENTIONS : ACCOUNTING IS BASED ON THE FOLLOWING THREE CONVENTIONS

1. Relevance**:** The convention of Relevance emphasis the fact that only information should be made available by accounting as is useful and relevant for achievingits objectives. The things which are not very relevant or important should not be mentioned in the books of accounts. As business is interested in knowing about the total labour cost. It is not interested in knowing what employees spend and what they save.

2. Objectivity**:** The Convention of Objectivity emphasizes that accounting information should be based on evidence and expressed by standards which are commonly acceptable. For example, stock of goods lying unsold at the end of the year should be valued at its cost price not at a higher price even if it is likely to be sold at a higher price in future. Reason is that no one can be sure about the price which will prevail in future.

3**.** Feasibility**:** The Convention of feasibility emphasizes that the time, labour and cost of analyzing accounting information should be compared with benefit arising out of it. Our benefit derived should always be much more than the money expended. As the cost of oiling and greasing is very low but it saves a lot of labour time.

ACCOUNTING CONCEPTS

1. Entity Concept**:**it is very important to note that for accounting purposes the business is treated as a unit of entity apart from its owners, creditors and other. In other words, the proprietor of an enterprise is always considered to be separate and distinct from the business which he controls. All the transactions of the business are recorded in the books of business from the point of view of business as an entity and even the proprietor is treated as creditor to the extent of his capital.

2. Dual Aspect Concept:Financial Accounting is transaction based. Of course, we are only concerned with transactions and events involving financial element. Ir. each of the transactions listed above there is two aspects to be recorded from the point of view of entity. For example, if there is purchase of goods - it involves two aspects: one aspect is the receipt of goods and the other is payment of cash.

3. Going concern Concept**:** This concept assumes the enterprise will continue to exist in the foreseeable future. This is in contrast with another view that the enterprise will be liquidated. Assets of business are valued on the basis of going concern concept and depreciation is charged on the basis of expected life rather than on the basis of market value.

4. Accounting Period Concept :Strictly speaking the net income can be measured by comparing the assets of the business existing at the time of its commencement with those

Existing at the time of its liquidation; since life of business is assumed to be indefinite, the measurement of income according to above concept is not possible for very-very long period. Thus, in order to know at frequent intervals' "how things are going" accountants normally take twelve months period for the measurement of income. •

5. Money Measurement Concept:The money measurement concept underline; the fact that in accounting every worth recording event, happening or transaction is recorded in j terms of money, in other words" a fact or a happening which cannot be expressed in terms of money is not recorded in accounting books.

6. Cost Concept : The underlying idea of cost concept is that : ,

(a) Asset is recorded at the price paid to acquire it, that is, at cost.

(b) This cost is the basis of all subsequent accounting for the asset.

7. Revenue Recognition Concept:in accounting the amounts received for the sale of output are called revenues. Revenue is the gross inflow of cash, receivables or other consideration arising in the course of an enterprise from the sale of goods, from the rendering of services and rewards arising from the provision of assets.

8. Matching Concept:After the revenue recognition, all costs which are applicable to the revenue of the period should be charged against the revenue in order to determine the net income of the business. This is essence of matching Concept. For ascertaining net income of the year, the revenue and expenses of the year are ascertained and following equation is applied :

P - S R-S E 1 -

Where P - Profit, S R - Sum of Revenues & S E - Sum of the expenses.

9. Accrual Concept**:** An associated concept to be discussed in the context of =• 'matching principle' is the accrual system of accounting which is favored by the modern accountants as against cash system of accounting. Under this method, revenue recognition depends on its realization and not actual receipt. Likewise costs are recognized when they are incurred and not when they are paid.

Self-Check Exercise

3. Name the Convention promoting realistic financial reporting in case of uncertainty?
4. Name the Convention assuming a business will continue to operate indefinitely?

1.9. LIMITATION OF ACCOUNTING

1. Financial Accounting ignores important non-monetary information. Only transactions which can be measured in terms of money can be recorded in the account books.
2. According to cost concept assets are recorded at the cost at which they are acquired and, therefore, accounts ignore the change of value of assets brought by changing value of money and market factors.
3. Financial accounting permits alternative treatments. No doubt accounting is based on Concept and it follows “generally accepted principles" but there exists more than one principle for the treatment of any one item.
4. Financial accounting is influenced by personal judgements. In spite of the fact that Convention of objectivity is respected in accounting but to record certain events estimates have to be made with which requires personal judgement.

1.10. DOUBLE ENTRY SYSTEM

This system owes its origin to an Italian merchant names Luco Paceoli who wrote the first book entitled 'De Computes et Scrituris' on double entry system of accounting in 1494. We have seen that every business has two aspects i.e.. when we receive something we give something in return, which is known by dual aspect expressed by a debit amount and an equal and offsetting credit amount. For example, when we purchase goods for cash, we receive

goods and give cash in return. Similarly, in the credit sale of goods, goods are given to the customer and the customer becomes debtor for the amount of goods sold to him. This method of writing every transaction in two accounts is known as Double Entry System of Accounting. Of the two accounts one account is debited while the other is credited with an equal amount. So the total of credit and debits is always equal.

1.10.1. Rules of Double Entry System

These are separate rules for personal and impersonal accounts which are give below :

1. Personal Accounts**:** These accounts record transactions with persons of firm. Person may be natural or artificial as Mr. Raman is a natural person but any Company like OCL is a legal person. The person receiving something is given debit and the person giving something is given credit. For example, Vijay sells goods to Rajan. In the books of Rajan Vijay will be given credit and in the books of Vijay Rajan's account will be given debit.

2. Impersonal Accounts:

(1) Real Accounts**:**These are accounts of assets. Assets entering in business are debited and assets leaving business are credited. For example, goods bought for cash, goods account will be debited and cash account will be credited.

(ii) Nominal Accounts:This deal with expenses, incomes, profits and losses. Accounts of expenses and losses are debited and accounts of incomes and profits are credited. Similarly, when commission is received commission account is credited as it is an income.

RULES OF DOUBLE ENTRY

Personal Account:Debit the receiver

Credit the giver Real Account

:Debit What Comes in

Credit what goes out Nominal

Account : Debit Expenses and Losses

Credit Incomes and gains

1.10.2. Ad**v**antages of Double Entry System

The following are the main advantages which can be derived from the use of this system.

1. It provides complete record of business transactions.
2. It provides a check on the arithmetical accuracy of the books of account as the total of debit entries must be equal to the total of credit entries.
3. The amount owing to outsiders and the amount due to the business can be ascertained with the help of personal accounts.
4. The Profit and Loss account can be prepared with the help of nominal accounts which is helpful to the business to ascertain the operating results of the business.
5. It helps to prepare balance sheet of the business which is helpful to ascertain the financial position of the business.
6. It helps to reduce the occurrence of errors and frauds and when occurred can be easily detected.

1.10.3. Disadvantages ofDouble Entry System

The following are disadvantages of the Double Entry System :

1. This system requires the maintenance of a number of books of accounts which is not practical in small concerns.
2. The system is costly because a large number of records are to be maintained.
3. There is no guarantee of absolute accuracy of books of account inspite of agreement of trial balance.

Keywords

Management Accounting:- The process of preparing financial and non-financial information for internal use by management to facilitate planning, decision-making, and control.

Cost Accounting:-A subset of management accounting focused on tracking and analyzing costs associated with production, operations, or specific activities within an organization.

Budgeting:-The process of creating a detailed financial plan that outlines expected income and expenses over a specific period, aiding management in resource allocation and performance evaluation.

1.11. Self Check Exercise

Short answer type questions

1. What is the main purpose of management accounting?
2. How does cost accounting differ from financial accounting?

Long answer type questions

3. Explain various accounting concepts and conventions in detail.
4. Define Double Entry system. Give its advantages & disadvantages.

1.12 Self-Check Exercise (Answer Key)

1. False, 2.True, 3. Prudence,4. Going Concern.

1.13Recommended Texts

Charles T. Horngren et al. (2014). Introduction to Management Accounting, Pearson India, Chennai, 16th Edition.

MBA-Distance
Education (First Year)

Lesson No. 2

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JOURNAL

STRUCTURE

2.1 Introduction

Journal is derived from the French word jour' which means a day. Journal, therefore, means a daily record of business transaction. Journal is a book of original entry because transaction is first written in journal from which it is posted to the ledger at any convenient time. The transactions are recorded strictly in the order of occurrence. The first principle of Double entry is that every transaction before being posted or classified in the ledger must be subject of an originating in the book of prime or original entry. ' Journal" is one of; the "Books of original entry" such books are also known as subsidiary books. The use of journal is restricted for recording special entries like opening, closing, transfer, rectification and those entries which are not covered by other subsidiary books maintained by the business.

Recording of the entries in "Journal" is known as "Journalising" or passing 'journal entries' Ruling of Journal *in* as under :

JOURNAL

Date		**Particulars**	**LF**	**Dr. Amount Rs.**	**Cr. Amount** Rs.
Year Month	Date	Name of the account Dr. to be debited To Name of the account to be credited (Narration)			

Column 1 (Date): The date of the transaction which it takes place is written in this column. The year is written only in the first entry appearing on each page. This column is divided into two parts the first part is used for writing the month and the second part is used for writing the date.

Column 2 (Particulars): In this column, the name of the account to be debited is written first. The word Dr. is written in the opposite side where the column ends. In the next time, the account to be credited is written preceded by the word 'To' leaving a few

r spaces away from the line "where column starts. An explanation of the entry known as "Narration" is also recorded in this columns below the line giving credit to the account.

Column 3 (L.F.): L.F. stands for ledger folio which means page of the ledger. In this column are entered the page numbers on which various accounts appear in the ledger.

Column 4 (Dr. Amount) : In this column, the amount to be debited against the debit account is written along with the nature of currency.

Column 5 (Cr. Amount) : In this columns, the amount to be credited against credit account is written along with the nature of currency.

Before we proceed further let us be familiar with few terms :

2.2 Transactions : All dealing by the entity (concern) with other or firms or company. For example purchase and sale of goods and services, cashreceipts and payments, Issue and receipt of bills of exchange, Promissory Notes etc.

2.3 Financial Event : These events ^are the occasions, the effect of which though -usually arises from transactions but they represent changes in value because of time factor with which outsiders are not directly concerned. For example,. Accruing of Interest, accruing of taxes, depreciations in the value of assets etc. »

2.4 Account : An account, is a summarized record of the transactions affecting one person, one kind of property, one class of gains or looses or one head of expenditure or income.

2.5 Debit and Credit : Accounts are maintained in a book called 'Ledger' Generally one page known as Folio is allotted to one account. Left-hand side is known as debit side i.e. debit side of the account is known as 'to debit the account* and recording of transaction on the right hand side i.e. credit side of the account is known as 'To credit the account*.

2.6 Debtor and Creditor :A person who owes money to the business is known as debtor and the person to whom the money is due by business is known as creditor

2.7 Goods : Includes all mercantile commodities, which are acquired or*produced by the business with a view to effect sales. It is also commonly known as 'Stock in Trade'.

2.8 On Credit: Transactions relating to purchases and sales of goods if not accompanied by exchange of cash are known as credit transaction. In such case movement of goods or rendering of the services takes place first and payment follows after some time.

2.9 Voucher : Any documentary support of financial transaction is called a voucher.

If two or more transactions of the same nature occur on the same day and either the debit account or credit account is common, such transactions can be conveniently entered in the Journal in the form of a combined journal entry instead of making a separate entry for each transaction. Such type of entry is know as a Compound journal entry.

In a going concern, the balances of the previous year appearing in various accounts are brought forward at the beginning of the new accounting year by means of a journal entry known as opening entry, to incorporate the previous balance in a new set of accounts. All the Assets Accounts are debited and Liabilities Accounts are credited. The difference between the assets and liabilities is credited to capital account.

2.10 Example : Journalise the following transactions in the books of Tirath Singh & Sons:

1. Machinery Purchased from H.M.T. Ltd. for Rs. 10,000 on credit.
2. Depreciate the machinery (mentioned above) at 10% per annum for full year.
3. Amount due from Chand Ji Rs. 1000 is irrecoverable as he is untraceable.
4. Received Rs. 1000 from Triloki Nath in full settlement against the amount due from

him Rs. 1050.

5. Pair Rs. 960 to Darbara Singh in full settlement against amount due to him Rs. 1000.
6. Sarkar who owed us Rs. 1000 is declared insolvent, and Rs. 60 paise in the rupees is received as final dividend from his estate.
7 Exchanged old furniture for new, the value of old furniture was Rs. 500 while the value of new furniture was Rs. 12000 balanced paid in cash.
8. Withdrew goods from the business costing Rs. 200 for the personal use by the proprietor.
9. Chand Ji remitted Rs. 400 against the amount already written as bed debt.
10. Supplied goods cost Rs. 2000 to Mahesh. Issued invoice at 10% above cost less 5% trade Discount.
11. Sold goods to Ram Manohar list price Rs. 1000 trade discount 10% cash discount 5%. He issued cheque the same day and availed the cash discount.

Solutions :

S.No.	Date	' Particulars	L.F.	Debit amount	Credit amount
1.		Machinery A/c Dr. To H.M.T. Ltd. (Purchased machinery on credit)		Rs. 10,000	Rs. 10,000
2.		Depreciation A/c Dr. To Machinery A/c (Being the depreciation on machinery charged @ 10%)		1,000	1,000
3.		Bad Debts A/c Dr. To Chand Ji A/c (Being the amount irrecoverable hence bad debts)		1,000	1,000
4.		Cash A/c Dr. Discount Allowed A/c Dr. To Triloki Nath A/c (Being amount received and discount allowed to Triloki Nath)		1,000 50	1,050
5.		Darbara Singh A/c Dr. To cash A/c To Discount Received A/c (Being the amount paid to and discount received from Darbara S.)		1,000 &	960 40
6.		Cash A/c Dr. Bad Debts A/c Dr. To Sarkar A/c (Being the amount recovered @ 60 P. per rupees and the balance written off as bad debts.		600 400	1,000

7.		Furniture A/c Dr. To cash A/c (Cash paid for the exchange of furniture is Rs. 1200-500“700)		700	700
8.		Drawing A/c Dr. To purchase A/c (Goods withdrawn at cost price for personal use)		200	200
9.		Cash A/c Dr. To Bad Debts Recovered A/c (Received the amount against bad debts)		400	400
10.		Mahesh A/c . v r. Dr. To Sales A/c (Sales of goods costing 2000 add 10% deduct 5% from 2200 i.e. Rs. 110)		2,090	2,090
11.		Bank A/c Dr. Discount Allowed A/c To Sales A/c (Sales of list price Rs. 1000 less trade discount 10%		855 45	900

Example : Journalise the transactions in the book of the trader :

April* 1997

Debit Balances: Cash in hand Rs. 8000, Cash at Dank Rs. 25,600, Stock *of*. goods Rs, 20,000, Furniture Rs. 4,000 and Building Rs. 10 000.

Debtors: Vijay Rs. 2.700, Anii Rs. 1,500, Ashwani Ra. 2000, Anupam Rs. 1800 and Madhu Rs. 100.

Creditors: Anand *Rs*. 5,400, Arya and Co. Rs. 7,700, Balwan? Rai Ra, 5,200 Mira. Loan Rs, 10,000.

1996

Apr, 3. Purchased goods worth Rs. 5000 less 20% trade discount and *5%* cash discount Rs. 2646 received from Vijay and allowed him discount Rs. 54.

Apr. 3. Bought 100 shares in Bharat Ltd. @ Rs.15 per share, brokerage paid. *Rs* 30,

Apr. 5. Goods worth Rs. 500 were damaged in transit, a claim was made or; railway authorities for the same.

Apr. 8. Cash Rs. 5292 paid to Anand and Discount allowed by him Rs108

Apr. 10. Received cash from the railway in full settlement oi claim for damages in transit. Anupam is

Apr. 13. declared insolvent and a dividend of 50 paise in the rupee is received from him in full

Apr. 15. settlement.

Apr. 18. Sold 40 shares of Bharat Ltd. % Rs. 18 per share, brokerage paid Rs15.

Apr. 20. Bought a horse for Rs. 2000 and a carriage for Rs. 1000 for delivering goods to customers.

Apr. 22. Paid for Charity Rs. 101
Postage Rs. 200
Stationery Rs. 199

Apr. 30 One month's interest on Mrs. Loan @ 12% P.A. become due but could not be paid.

Apr. 30 The horse bought on Jan. 20 died its carcass was sold for Rs. 50.

Apr. 30 Received from travelling salesman Rs, 3000 for goods sold by him after deducting his travelling expenses Rs 150.

Apr. 30 Paid for : Salaries Rs. 3500
Rent Rs. 1500

Solution : Sold goods worth Rs. 10,000 less10% trade discount.

S.No.	Date	Particulars		L.F.	Debit amount	Credit amount
					Rs.	Rs.
	1996 Apr.1	Cash Account	Dr.		8,000	
		Bank Account	Dr.		25,600	
		Stock Account	Dr.		20,000	
		Furniture Account	Dr.		4,000	
		Building Account	Dr.		10,000	
		Vijay A/c	Dr.		2,700	
		Anil A/c	Dr.		1,500	
		Ashwani A/c	Dr.		2,000	
		Anupam A/c	Dr.		1,800	
		Madhu A/c			100	
		Dr. To Anand A/c				5,400
		To Arya & Co. A/c				7,700
		To Balwant Rai A/c				5,200
		To Mrs. Loan A/c				10,000
		To Capital Account				47,400
		(Being balances bought in from last year)				
	Apr. 1	Purchase Account	Dr.		4,000	
		To cash Account				3,800
		To Discount Account				200
		(Being goods worth Rs. 5,000 purchased for cash less 20% trade and 5% cash discount)				
	Apr. 3	Cash Account	Dr.		2,646	
		Discount Account	Dr.		54	
		To Vijay a/c				2,700
		(Being cash received from Vijay and discount allowed)				
	Apr. 5	Investment in share Account	Dr.		1,530	
		To cash Account				1,530
		(Being purchase of 100 shares in Bhatat Ltd. @ Rs. 15 per share plus brokerage Rs. 30)				

Apr. 8	Railway claim Account Dr. To Railway Purchases A/c (Being claim sent to Railway for good sent in transit)		500	500
Apr. 10	Anand A/c Dr. To cash Account To discount Account (Being cash paid to Anand and discount allowed by him)		5,400	5,292 108
Apr. 13	Cash Account Dr. To Railway Claim A/c (Being cash received in full settlement of railway claim)		500	500
Apr. 15	Cash Account Dr. Bad Debts Account Dr. To Anupam A/c (Being half the dues received from Anupam and balance written off as Bad Debts)		900 900	1800
Apr. 18	Cash Account Dr. To Investment in shares A/c (Being 40 shares sold @ Rs. 18 per shares less broken Rs. 15)	•	705	705
Apr. 20	Livestock Account Dr. Carriage Account Dr. To cash Account (Being horse and carriage charges bought for delivering good to customers)		2,000 1,000	3,000
Apr. 22	Charity Account Dr. Postage Account Dr. Stationary Account Dr. To Cash Account (Being cash paid for charity, postage and stationery)		01 200 199	500
Apr. 30	Interest Account Dr. To Mrs. Loan Account (Being interest payable on Mrs. Loan Rs. 100@ 12% p.a. for month)		100	100
Apr. 30	Cash Account Dr. Profit and Loss Account Dr. To Live Stock Account (Being horse car case sold for cash and balance of cash of horse written off as loss)		50 1950	2000

Apr. 30	Cash Account Dr.		3000	
	Travelling Exp. A/c Dr.		150	
	To Sale Account			3150
	(Being Rs. 300 cash received from travelling Rs. 300 cash received from travelling salesman for sales after deducting his travelling expenses Rs. 150)			
Apr. 30	Salaries Account Dr.		3500	
	Rent Account Dr.		1500	
	To Cash Account			5000
	(Being payments of Salaries & Rent)			
Apr. 30	Cash Account Dr.		9000	
	To Sales Account			9000
	(Being sale of goods worth Rs. 10,000 less 10% trade discount			

Self-Check Exercise

1. What is the document that serves as evidence for a financial transaction?
2. What term is used for items held for sale or use in the production process?
3. What is the term for a person who owes money to a business?

Keywords:-

Journal:- A book of original entry where all financial transactions are initially recorded in chronological order before being transferred to the ledger.

Entry:- A single record of a financial transaction in the journal, consisting of debits and credits.

Debit:- The left side of an account, indicating an increase in assets or an expense, and a decrease in liabilities or income.

Credit:- The right side of an account, indicating an increase in liabilities or income, and a decrease in assets or expenses.

2.11 Self Check Exercise

Short answer type questions

1. Explain the purpose of a journal entry in accounting.

2.Describe the difference between a general journal and a special journal.

Long Answer type questions

3. Explain the ruling of Journal in detail.

4.Pass the following Journal entries:

i. Purchased goods worth Rs.2000 less 10% trade discount and 5% cash discount.
ii. Bought 200 shares in Bharat Ltd @ Rs 25per share, Brokerage paid Rs. 50.
iii. Sold 100 share of Bharat Ltd @ Rs 30 per share Brokerage paid Rs.30.

2.12 Self-Check Exercise(Answer Key)

1. Receipt , 2.Inventory , 3.Debtor

SUBSIDIARY BOOKS

STRUCTURE

3.1 Introduction

All the transactions of a business are in the first instance recorded in the journal. The journal is useful in that it contains the first record of all business dealings and that it clearly shows the effect of each transaction on the ledger accounts. But journalising of every transaction is a lengthy task and becomes more so when a business grows in size. In such a situation the whole system of book keeping must be organized in such a way that it will permit subdivision of duties and quick working. Therefore, unless the business is small one it is no longer possible to enter every transaction in the journal and the journal is split up into a number of separate journals know as the subsidiary books or books of prime entry. The journal is subdivided in such a way that a separate book is used for each type o: transaction that are sufficiently numerous. If transaction of a particular class is comparatively few, a separate book is not allotted to them but they are left in journal. The various reasons for maintaining the subsidiary books are given under :

(i) Economy in Labour: If the transactions are recorded in the books of accounts directly, it will consume less time than if the transactions are recorded in the journal and posted to the ledger.

(ii) More Accuracy : There will be more accuracy in the books of accounts as entries are made in total only and that too once in a month.

(iii) Statistical Records : Additional information can be collected while maintaining a subsidiary book. For example, sales book can collect the information relating to the sales of different areas or of different salesman.

(iv) Maintenance of Accounts : If specialized books are kept, it may be possible to avoid maintenance of some accounts books. For example the date of payment and cheque no. etc. noted in the purchases book will obviate the need of maintaining the creditors account.

The various books into which the journal may be sub-divided are :

1. Purchase book.
2. Purchases Returns book.
3. Sales book.
4. Sales Return book.
5. Bills receivable book.

6. Bills payable book.
7. Cash book.

3.2 Purchase Book

Purchase book is also known as 'Invoice Journal' of Bought Journal of Purchases Journal issued for recording credit purchase of goods meant for resale. Cash purchases will not be entered in purchases book (to be entered in cash book) and credit purchases of goods not meant for resale viz. Assets, shall be entered in journal proper and not in the purchases book.

Form of Purchase Book : Usual purchases book should have columns for date, invoice no., particulars, ledger folio, details and amount.

Invoice : When we purchase goods on credit we receive a statement from the supplier giving the particulars of goods supplied by him. The statement is called invoice. Invoice, state quantity, price, value of goods and discount allowed.

Posting : Each entry appearing in the purchases book is posted daily or as soon as possible to the credit of the account of the person from whom the goods were purchased and periodically, say at the end of each month, the purchases book is added up.

Illustration 1 : From the following transactions of a merchant, prepare the purchase book and post it into the ledger.

1997

January 1 Purchased goods on credit from Sharma Trading Co. - Rs. 1234.
11 Purchased on credit from S.K. Das - Rs. 567 25
Purchased on credit from Ram & Sons - Rs. 2345 30 Bought
goods from Ratan Bros. - Rs. 3265

Purchases Book

Date	Particulars	Invoice No.	Ledger No.	Amount
1997				
Jan. 1	Sharma Trading Co.			1234
11	S.K. Das			567
25	Ram & Sons			2345
30	Ratan Bros			3265
				7411

Sharma Trading Co.

Date	Particulars	Amount	Date	Particulars	Amount
			1997 Jan.1	By Purchases	1234

S.K. Das

Date	Particulars	Amount	Date	Particulars	Amount
			1997 Jan.11	By Purchases	567

Ram & Sons

Date	Particulars	Amount	Date	Particulars	Amount
			1997 Jan.25	By Purchases	2345

Ratan Bros.

Date	Particulars	Amount	Date	Particulars	Amount
			1997 Jan.30	By Purchases	3265

Purchase Account

Date	Particulars	Amount	Date	Particulars	Amount
1997 Jan.31	To Sundries as per. Purchase Book	7411			

3.3 Purchase Returns Book

The Purchases Return Book is also known as Return Outwards Book. It is used for recording returns of goods purchased. Goods purchased may have to be returned to the supplier for various reasons such as not up to sample or not ordered or damaged during the transit, etc. While returning the goods to the supplier a letter is sent to them for their intimation and stating therein that we have debited your account of goods being returned herewith for the reasons stated.

Illustration 2 ; Record the following transactions in the Returns Outwards Books of M/s Raja Traders and post the same in Ledger.

1997

April 9 Returned goods to Sharma Trading Co. - Rs. 134

20 Goods returned to Gupta - Rs. 65 2

5 Returned to Broad Ways - Rs. 500

Purchase Returns Book

Date	Particulars	LF	Debit Note Rs.	Amount Rs.
1997				
April 9	Sharma Trading Co.			134
20	Gupta Bros.			65
25	Broad Ways			500
				699

Sharma Trading Co.

Date	Particulars	Amount	Date	Particulars	Amount
1997 April 17	To Purchases Returns	134			

Gupta Bros.

Date	Particulars	Amount	Date	Particulars	Amount
April 20	To Purchases Returns	65			

Broad Ways

Date	Particulars	Amount	Date	Particulars	Amount
April 25	To Purchases Returns	' 500			

Purchase Returns Account

Date	Particulars	Amount	Date	Particulars	Amount
			1997 April 30	By Sundries as per purchases returns books	500

Self-Check Exercise

1. The Purchase Book is used to record credit purchases of goods.
2. The Purchase Return Book is used to record the return of goods to suppliers.

3.4 Sales Book

The Sales Book is also called Sales Day Book. It is employed for recording all goods sold on credit. Cash sales are not entered in this book.

Posting: Each individual sale recorded in the Sale Book is posted daily or as soon as possible to the debit of the persona! account of the customer and the periodical total of the book is posted to the credit of sales account in the ledger by writing "By Sundries as per Sale Book".

Illustration 3: Write up the Sales book from the following transaction of a merchant and post it into the ledger.

1997

January 6 Sold goods to Mahesh Stores Rs. 532

10 Goods sold to Banarsi Dass & Co. Rs. 150

15 Sales to Ahmed & Co. Rs. 782

19 Goods sold to Mahesh Stores Rs. 1265

30 Sold old Typewriter on credit to Mr. Raja

Sales Book

Date	Particulars	Invoice No.	L.F.	Amount (Rs.)
1997				
Jan. 6	Mahesh Stores			532
10	Banarsi Das & Co.			150
15	Ahmed & Co.			782
19	Das Bros.			390
25	Mahesh Stores			1265
				3119

Mahesh Stores

Date	Particulars	Amount	Date	Particulars	Amount
1997					
Jan. 6	To Sale	532			
25	To Sale	1265			

Banarsi Das & Co.

Date	Particulars	Amount	Date	Particulars	Amount
1997					
Jan. 10	To Sales	150 .			

Ahmed & Co.

1997					
Jan. 15	To Sale	782			

Dass Bros.

1997					
Jan. 19	To Sales	390			

Sales Account

Date	Particulars	Amount	Date	Particulars	Amount
			1997 Jan.31	By Sundries as per sales book	3119

Note : Transaction dated January 30 will not be entered in the sales book. i.e. the sale of an asset.

3.5 Sales Returns Book

This is also known as Returns Inwards Book. It records all returns of goods sold. Goods sold may be returned by our customers for various reasons such as goods sent were of wrong description or inferior quality or demanded.

When a customer returns goods, a credit note is made out in duplicate, the original being sent to him and the copy retained. Each entry appearing in the sales returns book is posted to the credit of the personal account of the customer and the periodical total of the book is posted to the debit of Sales Return Account in the ledger by writing "To sundries as per sales returns book".

Illustration : From the following transactions of a merchant prepare the sales return book and post it into the ledger.

1997
April
8 Good returned by E. Parker Rs. 32
30 Goods returned by Das Bros, amounted to Rs. 53

Solution :

Date	Particulars	Credit Note	L.F.	Amount (Rs.)
1997				
April 8	E. Parker			32
30	Das Bros.			53
				85

Sales Returns Account

Date	Particulars	Amount	Date	Particulars	Amount
1997 April 30	To Sundries as per	85			

E. Parker

1997 April 8	By Sales Returns	32			

Das Bros.

			1997 April 30	By Sales Returns	53

Self-Check Exercise (True/False)

3. The Sales Book is used to record credit sales of goods.
4. The Sales Return Book is used to record the return of goods by customers.

3.6 Bills Receivable Book

All receipts of bills are entered in a book called Bills Receivable Book. Whenever a bill of exchange is received, particulars are entered in the appropriate columns of the bills receivable book.

Posting: The periodical total of the bills receivable is posted to the debit of the bills receivable account in the ledger. Each entry in the book is posted to the credit of the individual account from whom the bill is received.

Illustration: Enter the following transaction in the B/R Book and post them in ledger.

1996
July 1 Received from Ram Lai for his Promissory noteRs. 400
2 Received acceptance from Sita Ram & Sons for 3 months Rs. 300
9 Sent out draft to Govind Ram who returns it to us duly accepted Rs. 100
for two months

20 We drew on Ram Nath for four months bill Rs. 940

Solution :

Bill Receivable Book

Date	Particulars	Term	Due Date	L.F.	Amount
1996					Rs.
Jul. 1	Ram Lai				400
5	Sita Ram & Sons	. 3 months	5th Oct.		300
8	Gobind Ram	2 months	11th Sept.		100
20	Ram Nath	4 months	23rd Nov.		490
	Bill Receivable A/c				1,290

Ledger Bill Receivable

Account"

Date	Particulars	J.F.	Amount	Date	Particular	J.F.	Amount
1996 July 31	To Sundries as per BillsReceivable Book		1,290				
			1,290				

Ram Lai Account

Date	Particulars	Amount	Date	Particulars	Amount
1996 Jul. 1	B/R A/C	400			

Sita Ram & Sons

Jul. 5	ByB/R A/C	300			

Govind Ram

Jul. 8	By B/R A/C	100			

Ram Nath

Jul. 20	By B/R / A/C	490			

3.7 Bill Payable Book

The details of the bills accepted by a trader recorded in a book is known as Bill PayableBook.

Posting : The periodical total of the bills payable book is posted to the credit of the bills payable account in the ledger. Each entry in the book is posted to the debit of the individual account to whom the bill is granted.

. Illustration :

1996 Feb.

4 Feb. 10 Accepted a bill 3 m/d for Rs. 100 drawn' by M/s Ramesh & Co.

Feb. 18 A bill at 30 d/d for Rs. 300 drawn by M/s Indra & Sons was accepted this day. Gave a promissory Note to M/s Moti Lai & Co. For Rs. 200 Payable one month after date.

Feb. 27 Gave acceptance to Shri Brij Raj's bill for Rs. 400 Payable 2 m/d.

Feb. 28 Did not accept a bill drawn by Mohan for Rs. 200 Payable after 2 months. Enter the above transactions in B/P book of the merchant and Post it into ledger.

Solution :

Bills Payable Book

	Particulars	J.F.	Term	Due Date	Amount
Feb 4	Ramesh & Co.		3 months	May 7	)0
10	Indra & Sons		30 days	Mar. 11	300
18	Mohan lal & Sons		1 month	Mar. 21	200
27	Brij Raj		2 months	Apr. 30	490
					1,900

Bill Payable A/c

Date	Particulars	J.F.	Amount	Date	Particular	J.F.	Amount
					By sundries as per bill payable book		1900

Ramesh & Co.

Date	Particulars	Amount	Date	Particulars	Amount
Feb. 4	To B/P A/C	1000			

Indra & Sons

Feb. 10	• To B/P A/C	300			

Brij Raj

Feb. 27	To B/P A/C	400			

3.8 Cash Book

The cash book is used for keeping a daily record of the transactions relating to each receipts and cash payments of a business. The cash book is kept in the form of a ledger account, the receipts being put on the debit side and the payments on the credit side. This book serves a double purpose. It is both a book of original record and a also a part of the ledger. It is a book of original record because all cash and bank transactions are recorded in it as and when they take place and it is also a part of ledger because it contains the cash and bank account taken out of the ledger and bound separately.

3.9 Journal Proper: Journal Proper is also known as general Journal or miscellaneous journal. It is used to record only those transactions for which no special subsidiary book or sub-journal are maintained. Transactions which are generally included in journal proper are :

(i) Transactions for which there is no special book such as bad debt, written off, bills dishonored, interest charged etc.
(ii) Opening Entries.
(iii) Transfer from one account to another.
(iv) Correction of errors.
(v) Adjustment usually made at the end of a trading period etc.

Self-Check Exercise

5. What is the term for a written promise by a debtor to pay a certain amount of money on a specified future date?
6. What is the term for a written promise by a business to pay a certain amount of money on a specified future date?
7. Bills receivable are considered a type of _____ instrument.

Keywords:-

Subsidiary Books:-Specialized books of original entry used to record specific types of transactions, such as sales, purchases, and cash transactions.
Cash Book:- A subsidiary book used to record all cash transactions, including both receipts and payments.
Sales Book:-A subsidiary book used to record all credit sales transactions of goods or services.
Purchase Book:-A subsidiary book used to record all credit purchases of goods or services.

3.10 Self Check Exercise

Short answer type questions

1. Write short Notes on following :
   (a) Debit Note
   (b) Credit Note

Long answer type questions

2. What do you mean by subsidiary books? Explain the procedure of preparing various subsidiary books.
3. How Return Inward Book and Return Outward Book are prepared?

3.11 Self-Check Exercise (Answer Key)

1. True, 2.True, 3.True, 4.True, 5. Promissory, 6. Acceptance, 7. Negotiable

MBA-Distance Education (First Year)

AFM 105
ACCOUNTING FOR MANAGEMENT

Lesson No. 4

AUTHOR : Ms. HARPREET KAUR

CASH BOOK

STRUCTURE

4.1 Introduction

One of the fundamental rules of double entry book keeping is that all entries must be recorded first in book of original entry and therefore posting should be done in the ledger but in the practice convenience and expediency has resulted in a departure from this rule in the case of entries relating to cash and bank. Cash book serves dual role of a ledger as well as of a journal. It is journal because all cash and bank transactions are recorded in it, as and when they take place and it is also a part of ledger because it contains the cash and bank account taken out of the ledger and bound separately.

4.2 Types of Cash Book

The types of cash book employed depend largely on the nature and requirements of every business concerned. Few of the more commonly used types of cash books are mentioned below :

(i) Single Column Cash Book
(ii) Double Columns Cash Book
(iii) Triple Columns Cash Book
(iv) Bank Cash Book
(v) Petty Cash Book

4.3 Single Column Cash Book

If a trader does not keep any bank account and does not allow or receive any cash discount, his cash book will record only Receipts and payments of cash. It will be just like ordinary cash account. All cash received will be entered on the debit side and all payments on the credit side.

Balancing the Cash Book: To verify the accuracy of the entries made and to confirm the authenticity of cash balance it should be balanced daily. Balances as per cash book must tally with the actual cash in hand. As more cash cannot be paid than what you have, therefore, the cash balance must always be a credit balance and it is to be entered on the credit side of the cash book for the purpose of closing the cash book. Opening balance of cash for the next period will appear on the debit side.

Illustration 1 : Enter the following transactions in the cash book of Mr. Singh

1997

Jan. 1 Cash in Hand Rs. 1245

5 Received from Ratan Bros. Rs. 356

7 Paid Rent Rs. 30

12 Paid Babu Lai Rs. 560

15 Cash Sales Rs. 325

25 Bought furniture for cash Rs. 120

31 Paid Salaries Rs. 125

Cash Book

Dr. Cr.

Date	Particular	Amount	Date	Particular	Amount
1997			1997		
Jan. 1	To Balance b/d	1245	Jan. 7	By Rent A/c	30
5	To Ratan Bros.	356	12	By Babu Lai	560
15	To Sales A/c	325	25	By Furniture A/c	120
			31	By salaries A/c	125
			31	By Balance c/d	1091
		1926			1926

4.4 Double Columns Cash Book

If a trader does not keep a bank account but allows and receives discounts the cash discount can be conveniently recorded in the cash book by providing on either side one extra column for discounts. The discount columns on the debit side of cash book will record discounts allowed and that on the credit side discount received. Such a cash bock is called two column cash book.

Balancing : Discount columns are not balanced but merely totaled. The total of discount column on the Dr. side of cash book is posted to the debit of discount, allowed A/c and total of discount column on Cr. side of cash book is posted to credit side of the discount received account.

Illustration 2 : From the following transactions write up a two column cash book and post it into the ledger.

Jan. 1 Cash in hand Rs. 1,257

5 Paid Ratan Bros. Rs. 395 discount received Rs. 5 Purchased

7 goods for cash Rs. 150

10 Received from Hari & Co. Rs. 690 discount allowed Rs. 10 Cash

15 Sales Rs. 496

17 Paid Sharma Trading Company Rs. 286

20 Received from Ram Mohan Roy Rs. 1289 discount Rs. 11

24 Paid wages Rs. 65

27 Paid J. Walker Rs. 250

27 Bought machinery for cash Rs. 1,500

29 Received from Hari & Co. Rs. 500

31 Paid Rent Rs. 50

Solution :

Dr. Cash Book Cr.

Date	Particular	Dis.	Cash	Date	Particular	Dli.	Cash
1997 Jan 1	To balance b/c		1257	1997 Jan.5	By Ratan Bros.	5	395
10	To Hari & Co.	10	690	7	By Purchase A/c	--	150
15	To Sale A/c	--	496	17	By Sharma Trading	286	--
20	To Ram Mohan Roy	11	1289	24	By Wage A/c		65
29	To Hari & Co.		500	27	By J. Walker		250
				28	By Machinery A/c By		1500
				31	Rent A/c By Balance		50
				31	c/d		1536

• Ratan Bros.

Date	Particulars	Amount	Date	Particulars	Amount
1997 Jan. 5	To Cash A/c To Discount A/c	395 5			

Purchase A/c

1997 Jan. 7	To Cash	150			

Hari &CO.

1997			1997 Jan.10 10 29	By Cash By Discount By Cash	690 10 500

Sale Account

			1997 Jan. 15	By Cash	496

Sharma Trading Company

1997 Jan. 17	To Cash	286			

Ram Mohan Roy

			1997 Jan. 15 Jan. 15	By Cash By Discount	1289 11

Wages A/c

1997 Jan24	To Cash	65		

J. Walker

1997 Jan. 28	To Cash	250		

Machinery Account

1997 Jan. 28	To Cash	1500			

Rent Account

1997 Jan. 31	To Cash	50			

Discount Account

1997 Jan. 31	To Sundries as per Cash Book	21	Jan. 31	By Sundries as per Cash Book	5

4.5 Triple Column Cash Book

In modern times it is virtually impossible to imagine that any business worth its name, can be run without having dealings with a bank. It is appropriate as well as convenient that cash book should have not only cash and discount columns but also a bank column on either side. Triple column cash book has three columns on each side.

(i) Discount Column : Which is nominal account, (ii) Cash Column : Which is real account (iii) Bank Column : Which is personal account.

Receipt side of the cash book is used to record all receipts both in cash, by cheque as also to record the discount allowed to our debtors while receiving the payment. Payment side of the cash book is used to record all payments both in cash and through cheque as also to record the discount received or availed by us from our creditors while making payment to them.

4.6 Contra Entries

In the three column cash book there will be some cross or contra entries, i.e. transfer of money from cash to bank (amount deposited) and vice versa (amount withdrawn from the bank for office use). In all such cases both entries occur in the cash book and no ledger posting is required. This is indicated by a contra sign (c) in the folio column indicating that the double entry aspect of this transaction is complete and it requires no posting to the ledger.

Self-Check Exercise (True/False)

1. The cash book is used to record only cash transactions.
2. A single-column cash book has separate columns for receipts and payments.

4.7 Balancing

Discount columns are totaled but not balanced. Bank columns are also balanced therefore; it is possible for the business to withdraw more than the amount deposited. In such a case total of the bank column on the credit side will be bigger than are on the debit side.

4.8 Illustration 3

From the following transactions write up a three column cash book and post it into ledger.

March 1 Cash in hand 567, cash at bank 15,675
2 Paid into bank Rs. 500
3 Received from Mohan Bros. Rs. 790, Discount allowed Rs. 10
7 Bought furniture for cash Rs. 260
10 Paid Ram Lai & Co. by cheque Rs. 475, discount received Rs. 5
13 Received from Hamid Ali cheque Rs. 500 and paid into bank.
15 Cash sales 785, paid into bank 1000
17 Bought a motor car and paid for same by cheque Rs. 5,250
19 Paid J. Walker by cheque Rs. 367, Discount received Rs. 3
22 Drew from bank for office use Rs. 250
25 Goods purchased for cash Rs. 350
27 Paid Ram Lai & Co. by cheque Rs. 500
30 Received from Hamid Ali Rs. 195, discount allowed Rs. 5
31 Paid establishment by cheque Rs. 450

Mohan Bros.

Date	Particulars	Amount	Date	Particulars	Amount
1997			1997 March 3	By Cash By Discount	790 10

Furniture A/c

1997 March 7	To Cash	260			

Ram Lai &Co.

1997 March 10 27	To Bank To Discount To Bank	475 5 500			

Hamid Ali

			1997 ' March 31 30	By Bank By Cash By Discount	500 195 5

Sales A/c

			1997 March 15	By cash	785

Motor Car Account

1997 March 7	To Bank	5250			

J. Walker

1997 March 19	To Bank To Discount	367 3			

Purchases A/c

1997 March 25	To Bank	350			

Establishment A/c

1997 March 31	To Bank	450			

Discount A/c

1997 March 31	To Sundries as per Cash Book	15	1997 March	By Sundries as per Cash Book	8

CASHBOOK

Dr. Cr.

Date 1997	Particulars	L.f.	Dis.	Cash	Bank	Date 1997	Particulars	L. F.	Dis.	Cash	Bank
Mar. 1	To balance b/d			567	15,675	Mar. 2	By Bank	C		500	
2	To Cash	C			500	7	By Furniture A/c			260	
3	To Mohan Bros		10		790	10	By Ram Lai & Co.		5		475
13	To Hamid Ali				500	15	By Bank	C		1,000	
15	To Sales A/c			785		17	By Motor Car A/c				5,250
15	To Cash	C			1,000	19	By J. Walker		3		367
22	To Bank	C		250		22	By Cash	C			250
30	To Hamid Ali		5	195		25	By Purchase A/c			350	
						27	By Ram Lai & Co.				500
						31	By Establishment A/c				450
						31	By balance c/d			477	10,383
			15	2,587	17,675				8	2,587	17,675
				477	10,383						

4.9 Bank Cash Book

Whenever cash in being handled by the employees there is always danger employeesmight embezzle cash.

In order to minimize this risk many of the business units follow this policy that all cash received is deposited in the bank and all cheques received also sent to the bank for collection and all payments are to be made by the issue of cheque. When concern adopts this policy the book maintained by concern is called Bank Cash Book having two columns on each side: Bank and discount. In this book all receipts. Whether in cash or by cheque, should be entered on the debit side of the book in bank column. All payments to be entered on the credit side of the book in the bank column.

Illustration : On 1st January 1997, Mr. Chand opened a bank account by depositing Rs. 5000 in cash. All payments are to be made by cheque and all remittances received are to be paid into the bank on the same day on which they are received. Enter the following transactions in Bank Cash Book.

1997

Jan. 2 Cash Sales Rs. 560
Paid Lai Chand Rs. 380 after deducting cash discount of 5%

Jan. 3 Received from Madan Lai a Cheque for Rs. 1480, discount allowed Rs. 20

Jan. 4 Paid Jindal Brother, Rs. 500 on account.
Mohal Lal's cheque dishonored.

Jan. 5 Received from Sohan Lai in cash Rs. 980 after deduction of 2% cash discount.

Jan. 7 Paid electric charges Rs. 15.

Bank Cash Book

Date	Particular	L.F.	Dls.	Bank	Date	Particulars	L.F.	Dis.	Bank
1997									
Jan 1	To Cash A/c			5000	Jan 2	By Lal		20	380
2	To Sales A/c			560	4	By Jindal			500
3	To Mohal Lal		20	1480	4	By Madan Lal		20	1480
6	To Sohan Lal		20	980	7	By Elec. Charges		15	
					31	By Balance c/d			5,645
			40	8020				40	8020

4.10 Petty Cash Book

The business which prefers to maintain bank cash book will feel the necessity of having another cash book for recording small payments which have to be made in cash. In other cases also petty cash book is preferred with a view to relieve the main cash book of numerous transactions involving petty amount. Such cash book is known as petty cash book. In every business there are bound to be certain expenses involving such a small amount which is to be paid in cash and not by cheque. Usual method of maintaining Petty Cash Book is to follow columns or analytical petty cash book. Column means that payment side of petty cash book is divided in different columns. Under the method of keeping petty cash, petty cashier is provided with fixed amount of money termed as float. This amount is sufficient to meet the balancing period of one week or one month. At the end of balancing period the petty cashier is given fresh cheque for the amount which he has spent.

Illustration :

M/s Ram Bros, maintain a petty cash book on imprest system with float of Rs. 300 reimbursement being made to the petty cashier at the end of each week. Draw columns for (i) Carriage, (ii) Postage and Telephone (iii) Stationery (iv) Sundry Expenses (v) Ledger Account.

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		Rs.
March 1	Issued cheque to petty cashier	300
2	Paid to Carriage	12
2	Paid to postal stamps	25
3	Purchase stationery for personal use	30
4	Purchase stationery for office use	40
5	Paid for newspaper magazines	15
6	Paid for telegram	7
7	Purchased Postage Stamps	22
8	Advance to clerk Mr. Singh	40

	Cash Book Folio	Date	Particulars	No.	Payments	Postage & Telephone	Stationary	Sundry Exp.	Carriage	L.F.	Ledger	Remarks
300		1	To Bank By		12	25	40	15	12		30	
		2	carriage Postal		25							
		2	Stamps		30							
		3	Drawings		40						40	Drawing A/c
		4	Stationery		15							
		5	Sundries (News			7						
		6	Paper)		7							
		7	Telegram Postal		22	22						
		7	Stamps Singh's		40							
			A/c									
			By Bal. C/d		191	54	40	15	12		70	Singh A/c
					109							
109					300							
191		8	To bal. b/d To									
		8	Bank									

Keywords:-

Transaction Recording: -Refers to the systematic recording of cash and bank transactions in the cash book.

Double:-Column Cash Book: A format of the cash book that separates cash and bank transactions into distinct columns for better clarity.

Balancing:- The process of comparing and reconciling the total receipts with total payments to determine the closing balance.

Liquidity Management:- Involves using the cash book to assess and manage the availability of liquid assets to meet short-term financial obligations.

4.11 Self-Check Exercise

Short Answer type questions

1. What is a Cash Book?
2. Why is a Cash Book important in accounting?

Long Answer type questions

3. Explain the format of a double-column cash book and how it aids in accounting?
4. Describe the process of balancing a cash book and its significance in financial management.

4.12Self-Check Exercise (Answer Key)

1.False, 2.False

MBA-Distance Education **MPOB 105**

(First Year) Semester-I **ACCOUNTING FOR MANAGEMENT**

Lesson No. 5 **AUTHOR : Ms. HARPREET KAUR**

LEDGER

STRUCTURE

5.1 Introduction

When the transactions by a business for a given period have been recorded in the journal the next thing is to classify journal entries according to the accounts affected. This classification of the journal entries is done in another book called ledger. The ledger is most important book of account and it is destination of the entries made in the journal or sub divided journal. It is a collection of all the three types of accounts : Personal, Real and Nominal. In Ledger we maintain accounts. Each account is allotted one or more pages depending upon the requirements. Ledger is usually ruled in following manner.

Ledger

Dr. Cr.

Date	Particulars	Folio	Amount	Date	Particulars	Folio	Amount

The transactions are entered in the ledger account in order of dates. Every entry must be dated and shown in the column meant for date. This is the first column on the left side of the account. Record the relevant amount on the left hand side of the account which according to the journal, is to be credited. In Ledger each entry on the debit side (left hand) commences with the word 'To' and on the credit side (right side) with word 'By' in the 'Particulars Columns'. In the folio column would be entered the page of the journal from which entry has been posted and in the folio column of the journal the page number of the ledger is written on which the relevant account appears.

5.2 Balancing the Account

Whenever it is desired to balance an account the two sides are unequal the difference is put on the side having lesser total. This will make both the sides equal. The amount of the difference inserted is known as balance of the account. In particulars column it is written as balance c/d (carried down). In subsequent period it is known as balance b/d (brought down).

If the total of the credit side of the account is less, the balance will be inserted on credit side with the words "By Balances c/d". This balance is known as debit balance and after closing the account it will be shown on the debit side with the words "To Balance c/d". Similarly, if the total of the debit side of the account is less the balance will be inserted on the debit side with the words "To Balance c/d". This balance is known as credit balance and after closing the account it will be shown on the credit side with the words "By Balance b/d

5.3 Personal Accounts and Balancing

Personal accounts relate to individuals and business entities and the rule is Receiver is to be debited and giver to be credited. Now if on any particular date the business wants to know as to how much amount is due to or due by a particular person to business then it should balance the account of the person concerned. Debit balance as per personal account signifies that the person is the debtor of the business and credit balances as per personal account signifies that the person is the creditor of the business.

Illustration :

The following transactions took place with Anand. Journalise his transaction and write ledger accounts .

Jan. 1 Sold him goods of Rs. 100
10 He returns good worth Rs. 200
15 Received cash from him Rs. 750 in full settlement of account
20 Sold him goods invoiced at Rs. 1200
30 Received cheque for Rs. 700 and deposited the same in our bank.

Journal

Date	Particular		Folio	Dr. Amount	Cr. Amount
Jan. 1	Anand	Dr.		1000	
	To Sales A/c				1000
	(For sale to Anand)				
Jan. 10	Return Inwards A/c	Dr.		200	
	To Anand				200
	(For goods returned by Anand)				
Jan. 15	Cash A/c	Dr.		750	
	Discount A/c	Dr.		50	
	To Anand				800
	(For Cash Received and Discount Allowed)				
Jan. 20	Anand	Dr.		1200	
	To Sales				1200
	(For Sales to Anand)				
Jan. 30	Bank A/c	Dr.		700	
	To Anand (For Cheque received and deposited)				700

Anand[1]* Account

Date	Particulars	Polio	Amount		Particulars	Polio	Amount
1997			1000	10 15 15	By Return Inward		
Jan.1	To Sales			30	By Cash750		200
			1200	31	By Discount		
20	To Sales				By Bank700		50
					By Balance c/d		
							500
			2200				2200
Feb.1	To Balance b/d		500				

Sale8 Account

Date	Particulars	Polio	Amount	Date	Particulars	Folio	Amount
				1997			
				Jan. 1	By Anand		1000
				Jan. 20	By Anand		1200

Returns Inward Account

Jan10	To Anand		200				

Cash Account

Jan.15	To Anand		750				

Discount Account

Jan.15	To Anand		' 50				

Bank Account

Jan.30	To Anand		700				

5.4 Real Account : These are the accounts relating to property or possession or rights. In real accounts what comes in is to be debited and what goes out is to be credited. On any particular date these accounts should have debit balance representing the worth of the item covered by the account. At the end of the year or at any other point of time when the financial position of the business is required to be ascertained these accounts are balanced.

5.5 Nominal Accounts : These are the accounts showing the various seats of expenses and sources of income. At the end of the specified period these accounts are closed by transfer to the final accounts i.e. Trading or Profit or Loss Account.

5.6 Capital Account ; The amount initially invested by the owner in the business is credited to capital account. This account reflects the position of the owner, in relation to business, by transfer to the final accounts i.e.. Trading or Profit and Loss Account.

5.7 Drawing Account : Frequently the owner withdraws money or goods from the business for his personal needs. These are actually withdrawals of capital but in order to save the capital account from large number of small entries a separate account known as "Drawings account" is opened Whenever drawings take place this account is debited and if (i) Cash is drawn then Cash A/c is credited and if (ii) Goods are withdrawn then either purchases A/c is credited or sales A/c is credited. It is suggested that if the owner has 'withdrawn goods at cost price, then purchases A/c should receive the credit otherwise sales A/c should be credited.

Self -Check Exercise

1.What is the primary function of a ledger?
2. From where does the ledger receive transaction data?

5.8 Illustration : On 1st April 1997, a merchant starts business with a capital of Rs. 15,000 and his transactions of the month were as follows :

April 1 Purchased Building for Rs. 8,500 .
3 Furniture Bought on Credit from C. Rs. 125
5 Bought goods for Cash Rs. 2500
7 Sold goods to X for Rs. 1350
8 Bought goods from Y Rs. 975 and from F Rs. 1025
10 Cash Sales Rs. 1840
12 Received Cash from X Rs. 1335, allowed him discount of Rs. 15, Returned goods to Y Rs. 65.
13 Sold goods to Ahuja Rs. 1200
15 Paid Y cash Rs. 900, discount received Rs. 5
17 Bought goods from Kapoor Rs. 950, Carriage paid on same Rs. 25
18 Sold goods to J. Rs. 1670
20 Purchased goods on credit from Sita Ram Rs. 700
22 Paid H on account Rs. 200
25 Gave away as charity cash Rs. 101 and goods worth Rs. 51
26- Paid Sundry expenses Rs. 85
27 Received Cash from J. Rs. 1000
28 Goods returned by Ahuja Rs. 100
'29 Paid C. Rs. 120, discount received Rs. 5
30 Salaries paid for the month Rs. 450, Amount withdrawn by the proprietor for private use Rs. 200

Record the transactions into journal and Post them into ledger.

Solution : Journal

Date	Particular		L.F.	Dr. Amount	Cr. Amount
1997 April 1	Cash A/c	Dr.		15,000	
	To Capital A/c				15,000
	(Being Capital introduced)				
2	Building A/c	Dr.		8,500	
	To Cash A/c				8,500
	(Building Purchased for Cash)				
3	Furniture A/c	Dr.		125	
	To C				125
	(Furniture purchased on credit from C)				

5	Purchase A/c	Dr.		2,500	
	To Cash A/c				2,500
	(Goods bought for cash)				
7	X	Dr.		1,350	
	To Sales A/c				1,350
	(Goods sold on credit Y to X)				
8	Purchase A/c	Dr.		2,000	975
	To X				1025
	To F				
	(Goods purchased on credit from X & F)				
10	Cash A/c	Dr.		1,840	1,840
	To Sales A/c				
	(Goods Sold for Cash)				
11	Cash A/c	Dr.		1,335	
	Discount A/c	Dr.		15	
	To X				1,350
	(Cash Received from X, discount allowed)				
12	Y	Dr.		65	
	To Purchases Returns A/c				65
	(Goods returned to Y)				
13	Ahuja	Dr.		1,200	
	To Sales A/c				1,200
	(Goods sold on credit to Ahuja)				
15	Y	Dr.		905	
	To Cash				900
	To Discount				5
	(Cash paid to Y, discount allowed)				
17	Purchases A/c	Dr.		950	950
	To Kapoor				
	(Goods bought from Kapoor on Credit)				
17	Carriage A/c	Dr.		25	
	To Cash (A/c				25
	(Carriage paid on purchases)				
18	J	Dr.		1,670	1,670
	To Sales A/c				
	(Goods sold on credit to J)				
20	Purchase A/c	Dr.		700	700
	To Sita Ram				
	(Goods purchased on Credit from Sita Ram)				

22	Kapoor Dr.			200	
	To Cash A/c				200
	(Cash paid to Kapoor)				
25	Charity A/c . Dr.			152	
	To Cash A/c				101
	To Purchases A/c				51
	(Cash received from J)				
26	Sundry Trade Expenses (A/c) Dr.			85	
	To Cash A/c				85
	(Trade expenses paid in cash)				
27	Cash A/c Dr.			1,000	
	To J				1,000
	(Cash received from J)				
28	Sales Returns A/c Dr.			100	
	To Ahuja				100
	(Goods returned to Ahuja)				
29	C Dr.			125	
	To Cash A/c To discount A/c (Cash				120
	paid and discount received)				5
30	Salaries A/c Dr.			450	
	Capital A/c Dr.			200	
	To Cash A/c				650
	(Salaries paid and drawing of the proprietor)				
				40,492	40,492

Ledger Cash Account

Dr. Cr

Date	Particulars	Folio	Amount	Date	Particulars	Folio	Amount
1997							
Apr. 1	To Capital A/c		15,000	1997	By Building A/c		8,500
10	To Sales A/c		1,840	Apr. 2	By purchases A/c		2,500
12	ToX		1,335	15	By Y		900
27	To J		1,000	17	By Carriage A/c		25
				22	By Kapoor		200
				25	By Charity A/c		101
				26	By Sundry Expenses		85
				29	By C		120
				30	By Salaries A/c		450
				30	By Capital A/c		200

Capital A/c

1997 Apilr.30	To Cash A/c		200	1997 April 1	By Cash A/c		15000

Building A/c

1997 April	To Cash A/c		8,500				

Furniture A/c

1997 April.3	To C		125				

Apr. 29	To Cash A/c To Discount A/c		120 5	1997 Apr. 3	By Furniture A/c		125

Purchases Account

1997 Apr. 5	To Cash A/c		2,500	Apr.25	By Charity		51
8	To Y		975.				
8	ToF		1025				
17	To Kapoor		9 50				
20	To Sita Ram		700				

1997 Apr. 7	To Sales A/c		1,350	1997 Apr. 12	By Cash A/c By Discount A/c		1335 15

Sales Account

				1997 Apr. 7	By X		1350
				10	By Cash A/c		1840
				13	By C		1200
				18	By J		1670

Y

1997				1997			
Apr. 12	ToPurchases Returns		65	Apr.8	By Purchases A/c		975
	A/c						
15	To Cash A/c		900				
15	To Discount A/c		5				

				1997			
				Apr. 8	By Purchase A/c		1025

Discount Account

1997							
Apr. 12	ToX		15				

Ahuja

1997				1997			
Apr. 13	To Sales		1200	Apr.28	By Purchases A/c		100

Kapoor

1997				1997			
Apr.22	To Cash A/c		200	Apr. 17	By Purchases A/c		950

Carriage Account

1997							
Apr. 15	To Cash A/c		25				

J

1997							
Apr. 18	To Sales A/c		1670	Apr.27	By Cash A/c		1000

Sita Ram

				1997 Apr.20	By Purchases A/c		700

Charity Account

1997 Apr. 2 5	To Cash To purchase		101 51				

Sundry Trade Expenses Account

1997 Apr. 26	To Cash A/c		85				

Sales Returns Account

1997 Apr.28	To Ahuja		100				

Salaries Account

1997 Apr.30	To Cash A/c		450				

Keywords

Ledger:- A principal accounting record containing all accounts used by a company, presenting a detailed record of financial transactions.

General Ledger:-A ledger that provides a summary of all accounts, offering an overall view of a company's financial position and performance.

Subsidiary Ledger:-A ledger containing detailed information for specific accounts, such as accounts receivable or accounts payable, supporting the general ledger.

Posting:- The process of transferring transaction details from the journal to the respective accounts in the ledger to maintain accurate and organized financial records.

5.9 Self-CheckExercise

Short answer type questions

1. What is a ledger in accounting?
2. How does a ledger differ from a trial balance?
3. What is the purpose of posting in the ledger?

Long answer type questions

4. Describe the role and significance of a ledger in the accounting process. How does it contribute to the overall organization of financial information within an entity?
5. Explain the process of posting transactions to the ledger. Include the role of journal entries and how posting contributes to the accuracy of financial records.

5.10 Self-Check Exercise (Answer Key)

1. Recording, 2. Journal

5.11 Recommended Texts and Readings:

M.Y. Khan & P.K. Jain (2017). Management Accounting: Text, Problems and Cases, McGrawHill

Robert Anthony, David F. Hawkins and Kenneth A. Merchant (2013). Accounting-Text and Cases, Tata McGraw-Hill Publishing Co. Ltd., New Delhi, 13th Edition.

MBA-Distance
Education (First Year)

AFM 105
ACCOUNTING FOR MANAGEMENT

Lesson No. 6

AUTHOR : Ms. RAJINDER KAUR

TRIAL BALANCE

STRUCTURE

6.1 Introduction

We know that the fundamental principle of double entry system of accounting is that for every debit, there must be a corresponding credit. Thus, for every debit or a series of debits given to one or several accounts, there is a corresponding credit or a series of credits of an equal amount given to some other account or accounts and vice versa. It follows, therefore, that the sums total of debit amounts should equal the credit amounts of the ledger at any date. But if the various accounts in the ledger are balanced, then the total of all debit balances must be equal to the total of all credit balances if the books of accounts are arithmetically accurate.

Thus at the end of financial year or at any other time, the balances of all the ledger accounts are entranced and are written up in a statement known as Trial Balance and finally totaled up to see if the total of debit balances is equal to the total of all credit balances.

The agreement of the Trial Balance reveals that both the aspects of each transaction have been recorded and that the books are arithmetically accurate. If the Trial Balance does not agree, it shows that there are some errors which must be detected and rectified if the correct final accounts are to be prepared. Thus, Trial Balance forms a connecting link between the ledger accounts and the final accounts.

The main objects of preparing the Trial Balance :

(I) To Check the accuracy of Double Entry System :According to the principle of double entry every transaction has two aspects : One debit and the other is credit. The trial balance is a proof of accuracy of double entry system.

(II) Helpful In preparing financial accounts **:** The Trial Balance records the balances of various ledgers at one place which helps in the preparation of profit and loss account and Balance Sheet which can be used for knowing the financial position of the business.

(iii) Arithmetical Accuracy **:** To have arithmetical accuracy of the books of accounts because of the agreement of the Trial Balance.

(iv) Summary :This is summary of various ledger. The ledger can be used for detailed information, if need so arises.

6.2 Limitations of Trial Balance

The following are the main limitations of Trial Balance :

(i) Trial Balance can be prepared only in those concerns, where double entry

system of accounting is adopted. This system is very costly and cannot be adopted by small concerns.

(ii) Though Trial Balance gives arithmetical accuracy of the books of accounts but there are certain errors which are not disclosed by the Trial Balance. That is why it is said that Trial Balance is not a conclusive proof of the accuracy of the books of accounts.

(iii) If trial balance is not prepared correctly then the final accounts prepared will not reflect the true and fair view of the state of affairs of the business. Whatever conclusions and decisions are made by various groups of persons the data will not be correct and will mislead such persons.

6.3 Preparation of Trial Balance

Trial Balance can be prepared by the following two methods :

1. Total Method : In this method, the debit and credit totals of each account are shown in the two amount columns, one for the debit total and other for the credit total against it.

2. Balance Method : In this method, the difference of each account is extracted. If debit side of an account is bigger, the difference is written in the debit column of the Trial Balance and if credit side is bigger, the difference is written in the credit column of the Trial Balance. Trial Balance is prepared on a loose sheet having four columns i.e. Serial No., Name of Account, Debit Balance or Total, Credit Balance or Total. A specimen is given as follows :

Trial Balance of _____

As on _____

3. Total and Balance Method : In this method debit total and credit total of all accounts as well balances of all accounts are shown.

Serial No.	Name of the Account	Dr. Balance (or total)	Cr. Balance (or total)
		Rs.	Rs.

6.4 Illustration :

Following are the transactions of T.P. Company. Write up the books and prepare trial balance.

Jan. 1997 Assets: Goodwill Rs. 18,000, Building Rs. 27,000, Stock Rs. 52000, Bank Balance Rs. 7000, Cash in hand Rs. 1480, Due from Ram Chander Rs. 960, Due from Desh Pandey Rs. 2000, Machinery Rs. 15000.

Liabilities : Loan from X @ 9% Rs. 30000 Due to Radhaswamy Rs. 7,000

Jan. 2 Drawn from Bank Rs. 2,000

Jan.3 Wages Paid Rs. 1,800

5 Purchases from Radhaswamy on Credit Rs. 6000
6 Return to Radhaswamy Rs. 500
8 Sales to Badshah Khan on credit Rs. 8,000
10 Received from Desh Pandey Rs. 1900 by cheque in full settlement.
12 Paid by cheque to Radhaswamy in full settlement of the amount due on Jan. 1 Rs. 6,900
13 Cash paid for machine repair Rs. 300
14 Sales to Desh Pandey on Credit Rs. 9,000
15 Received from Ram Chander by cheque Rs. 960
16 Salaries paid Rs. 500
17 Purchases on credit from Inder Mai Rs. 2000
18 Purchases from Prakash on credit Rs. 500
19 Sales on cash Rs. 5000, received cheque
20 Rent paid Rs. 300 by cheque
20 Insurance premium paid Rs. 350 by cheque
21 Drawn from bank for private use Rs. 1000
23 Sales to X & Co. on credit Rs 2500
25 Paid for advertisement Rs. 500 by cheque
26 Paid for repair to building Rs. 200
31 Bank charged interest for month Rs. 50
31 Allow interest on capital @ Rs. 10% p.a.
31 Received from X & Co. by cheques Rs. 2000

JOURNAL

Date	Particular		Folio	Dr. Amount	Cr. Amount
1997					
Jan.1	Goodwill A/c	Dr.		18,000	
	Building A/c	Dr.		27,000	
	Stock	Dr.		52,000	
	Bank	Dr.		7,000	
	Cash	Dr.		1,480	
	Ram Chander	Dr/		960	
	Desh Pandey	Dr.		2,000	
	Machinery	Dr.		15,000	
	To Loan				30,000
	To Radhaswamy				7,000
	To Capital A/c (B/F)				86,400
	(Opening entry Capital A/c is excess of Asset over liabilities)				
Jan.31	Interest A/c	Dr.		725	
	To Capital A/c				725
	(Interest @ 10% allowed on Opening Balance of Capital)				

CASHBOOK

Date	Particulars	L.F	Dis.	Cash	Bank	Date	Particulars	L.F.	Dis.	Cash	Bank
1997						1997					
Jan.1	To Balance			7,000	1480	Jan.2	By Cash	C		2,000	
2	To Bank	C			2000	3	By Wages				1,800
10	To DcshPanaey		100	1,900		12	By Radhaswamy		100	6,900	
15	To Ram Chander			960		' 13	By Repairs				300
19	To Sales			5,000		15	By Salaries				500
31	To X & Co.			2,000		18	By Purchases				500
						. 20	By Rent			300	
						20	By Insurance			350	
						21	By Capital A/c			1,000	
						25	ByAdvertisement	.V.1		500	
						26	By Repairs				200
						31	By Interest			50	
							By Balance c/d			5,760	180
			100	16,860	3,480				100	16,860	3,480

PURCHASE BOOK

• Date	, Particulars	Invoice No.	L.F.	Rs.
1997				
Jan.5	Radhaswamy			6,000
Jan. 17	Inder Mai			‘ 2,000
				8,000

SALES BOOK

Date	Particulars	Invoice No.	L.F.	Rs.
1997	Badshah Khan			8,000 •
Jan.8	Desh Pandey			9,000
Jan.13	X. & Co.			2,500
Jan.23				19,500

PURCHASE RETURNS BOOK

Date	Particulars	Invoice No.	L.F.	Rs.
1997				
Jan. 6	Radhaswamy			500
				500

LEDGER

CAPITAL ACCOUNT

Date	Particulars	J.F.	Amount	Date	Particulars	Folio	Amount
1997					1997		
Jan.21	To Bank To		1,000	Jan.l	To Balance b/d By		86,940
31	Balance c/d		86,665	31	Interest		725
			87,665				87,665
					By Balance b/d		86,665

Radhaswamy A/c

Date	Particulars	J.F.	1. Amount	Date	Particulars	Folio	Amount
1997					1997		
Jan. 12	To Bank		7,000	Jan.l	By Balance b/d		7,000
6	To Purchase Returns		500		By Purchase		6,000
31	To Balance c/d		5,500				
			13,000				13,000
					By Balance b/d		5,500

Interest A/c

Date	Particulars	J.F.	Amount	Date	Particulars	Folio	Amount
Jan.31	To Capital To Bank		725	Jan.31	By Balance c/d		775
			50				
			775				775
	To balance b/d		775				

SALES ACCOUNT

Date	Particulars	J.F.	Amount	Date	Particulars	Folio	Amount
Jan.31	To Balance c/d		24,500	Jan. 19	By Banks		5,000
				Jan.31	By Sales as per Sales Book		19,500
			24,500				24,500
					By Balance b/d		24,500

X Co. A/c

Date	Particulars	J.F.	Amount	Date	Particulars	Folio	Amount
Jan.23	To Sales		2,500	Jan.31	By Bank		2,000
				31	By Balance c/d		500
			2,500				2,500
Feb.1	To Balance b/d		500				

Goodwill A/c

Jan.1	To Balance b/d		18000				

Building A/c

Jan.1	To Balance b/d		27,000				

Stock A/c

Jan.1	To Balance b/d		52,000				

Ram Chander A/c

Jan.1	To Balance b/d		960	Jan.15	By Bank		960

Machinery A/c

Jan.1	To Balance b/c		15,000				

Wages A/c

Jan.3	To Cash		1,800				

Repairs A/c

Jan. 13	To Cash To Cash		300 200	Jan.31	By Balance c/d		500
			500				500
Feb.1	To Balance b/d		500				

			Purchase	Return	\/c		
				Jan. 31	By Purchases returns as per purchase book		500

Salaries A/c

Jan 15	To Cash		500				

Rent A/C

Jan 20	To Bank		300			

Insurance A/c

Jan.20	To Bank		350				

Discount A/c

Jan.31	To Cash Book		100	Jan. 31	By Cash Book		100
			100				100

TRIAL BALANCE

Serial No.	Name of Account	Dr. (Rs.)	Cr. (Rs.)
1.	Capital		86,655
2.	Goodwill	18,000	
3.	Building	27,000	
4.	Stock	52-500	
5.	Machinery	15,000	
6.	Desh Pandey	9,000	
7.	Radhaswamy		5,500
8.	Loan		30,000
9.	Interest	775	
10.	Sales		24,500
11.	X & Co.	500	
12.	Wages	1,800	
13.	Repairs	500	
14.	Purchases	8,500	
15.	Purchase Return		500
16.	Salaries	500	
17.	Rent	300	
18.	Insurance	350	
19.	Inder Mai		2,000
20.	Badshah Khan	8,000	
21.	Advertisement	500	
22.	Cash in Hand	180	
23.	Cash at Bank	5,760	
		1,49,165	1,49,165

6.5 ERRORS REVEALED AND NOT REVEALED BY TRIAL BALANCE **:**

If the two sides of a trial balance agree it is prime facie evidence of the arithmetical accuracy of the entries made in the ledger. But even if the balance agree, it does not necessarily mean that accounting records are free from all errors, because there are certain types of errors which are not revealed by trial balance. Therefore a trial balance should not be regarded as a conclusive proof of accuracy of accounts.

ERRORS REVEALED BY TRIAL BALANCE

(i) Omission to post an amount into Ledger :
If an item is not posted from Journal or subsidiary book to ledger, two sides of trial balance shall not agree, e.g. if goods sold on credit to A recorded properly in sales book but not debited to A's account in ledger, the debit side of trial balance shall fall short.

(ii) Omission to post an amount in trial balance :
It is natural that if balance of an account is not recorded in trial balance two sides of trial balance shall not agree. This is an indication of error in accounts.

(iii) Wrong totaling or Balancing of ledger account :
If any account in the ledger is wrongly totaled or balanced then also the trial balance shall not agree.

(iv) Wrong totaling of Subsidiary Books :
If total of any of the subsidiary book is wrong the trial balance will not agree.

(v) Posting on wrong side :
If any entry which was to be posted on the debit side of some account is posted on credit side of same account or any other account will create difference in both sides of trial balance.

(vi) Posting of wrong amount :
If while posting some entry in the ledger the amount entered is wrong the trial balance will not agree.

ERRORS NOT REVEALED BY TRIAL BALANCE

(i) Error of Omission :
If a transaction is not recorded in books of original entry, then both debit and credit effects of transaction will be omitted and trial balance shall not be effected.

(ii) Error of Commission :
These errors are the result of carelessness or accounting staff and in some cases such errors do not effect the totals of trial balance e.g. wrong recording in the books of original entry or posting to the wrong account with correct amount and correct side e.g. goods sold to A on credit but amount debited to B's account.

(iii) Compensating Error :
Such errors neutralize the effect of errors committed earlier. When one error is committed which effects the total, another error of opposite effect is committed which neutralizes the effect of earlier error.

(iv) Error of Principle :
Whenever any income or expenditure is not properly allocated between capital and revenue, the mistake so made is called a mistake of principle.

(v) Error of duplication :
Any error due to recording and posting a transaction twice also does not effect the totals of the two sides of trial balance.

6.6 LOCATION OF ERRORS THROUGH TRIAL BALANCE

(i) Divide the difference by two and find out if some figure equal to that appears in the trial balance. It is possible that such item might have been recorded in the wrong side of trial balance, thus causing double the difference.

(ii) If the mistake is not located the difference should be divided by 9 and if difference is

evenly divisible by 9 the error may be due to transportation of figures e.g. Rs. 590 wrongly recorded as Rs. 950.

(iii) The next step is to recheck the debit and credit totals of trial balance to satisfy that balance has been cast correctly.

(iv) If mistake remains undetected, make sure that balances of totals of the ledger accounts have been correctly shown in the trial balance.

(v) Check the totals of schedule of debtors ad creditors and find out that all balances have been included in the list.

(vi) Check all the figures badly written.

Self-Check Exercise

1. What is the purpose of preparing a trial balance?
2. Which side of the trial balance should total credits equal?
3. What is the term for an error that does not affect the trial balance?
4. Trial balance is prepared to ensure the _____ of accounting records.

Keywords:-

Trial Balance:- A statement that lists the balances of all ledger accounts to verify that the total debits equal total credits.

Ledger:-A book or computerized record containing all accounts used by a business, each account showing its debits and credits.

Debit and Credit:- The two sides of an account, with debit representing the left side and credit the right side; entries are made to increase or decrease account balances.

Arithmetic Accuracy:-The quality of having correct mathematical calculations in accounting records, crucial for the accuracy of the Trial Balance.

Balancing Errors:- Mistakes in accounting that lead to the Trial Balance not balancing, which can include errors in addition, subtraction, posting, or omission of accounts.

6.7 **Self-Check Exercise**

Short answer type question

1. What does it mean if the Trial Balance doesn't balance, and what steps can be taken to identify the errors?

Long answer type question

2. Is Trial Balance a conclusive proof of accuracy ? Explain.
3. Explain the errors which are revealed by trial balance and which are not.

6.8 Self-Check Exercise (Answer Key)

1. Validation, 2. Debit, 3. Compensating, 4. Accuracy

MBA- Distance
Education (First Year)

AFM 105
ACCOUNTING FOR MANAGEMENT

Lesson No. 7

AUTHOR : Ms. RAJINDER KAUR

FINAL ACCOUNTS

STRUCTURE

7.1 INTRODUCTION

When the transactions of a business for a certain period have been entered in the journal, posted therefrom into the ledger and the arithmetical accuracy of the ledger tested by means of a trial balance, we enter upon the last stage of book keeping, namely the preparation of a summary of the accounts. The summary consists of transactions profit and loss account and balance sheet.

7.2 TRADING ACCOUNT

Trading account is a part of profit and loss account. Usually profit and loss account of the business is divided into two parts. The first part is termed as trading account which is so prepared as to show the amount of profit or loss account of purchasing the goods of selling them. Such profit is termed as Gross Profit and Loss as Gross loss. Gross profit is difference between the cost of goods that have been sold and the proceeds of their sales without any deductions in respect of the indirect expenses. The following items usually appear on the debit and credit side of trading accounts. *

(i) On the debit side

(a) Opening Stock : This is stock which remained unsold at the end of previous accounting period.

(b) Purchases : Purchases means total purchases, i.e. Cash Plus Credit. If there is any purchases returns, these should be deducted and net purchases be shown in the trading account.

(c) Direct Expenses : Those expenses which are incurred while purchasing the goods or while manufacturing it are called direct expenses. These direct expenses generally are wages paid for manufacturing the goods, carriage inwards, freight, duty, clearing charges, motive power, gas, fuel, stores, royalties etc.

(ii) Item on credit side of trading account

(a) Sales : Sales mean total sales i.e. cash plus credit sales. If there are any sales returns, these should be deducted from sales. So net sales are credited to trading account.

(b) Closing Stock : It is the value of stock lying unsold in the godown or shop on the last day of accounting period. Normally closing stock is given outside the trial balance, in that case it is to be shown on the credit side of trading account. But if it is given inside the trial balance, it is not to be shown on the trading side of the trading account but appears only in the balance sheet as asset.

PROFORMA OF TRADING ACCOUNT :

Trading Account for the year ended.... _____ _____ _____

Particulars	Amount	Particulars	Amount
To Opening Stock		By Sales	
		Less sales returns	
To Purchase		By Closing Bank	
Less purchases returns			
To Carriage .		By Gross Loss	
Inward or Carriage		Transferred to Profit	
on purchases		& Loss Account	
To freight			
To Wages, manufacturing			
or productive wages			
To Factory expenses			
To Store Consumers			
To Royalities			
To Motive Power			
To Coal 86 Coke			
To Water			
To Oil			
To Billing			
To Octroi			
To Dock Charges			
To Custom Duty			
To Gross Profit			
Transferred to Profit			
& Loss Account		V	

Self-Check Exercise

1. What is the primary purpose of a trading account?
2. What transactions does a trading account record?

7.3 PROFIT AND LOSS ACCOUNT

The aim of profit and loss account is to ascertain the net profit or net loss for a particular period. For earning net profit a businessman has to incur many expenses in addition to direct expenses. These expenses are deducted from gross profit and the resultant figure is net profit. Net profit is the surplus remaining after charging against gross profit all the expenses. When such expenses are more than gross profit the result is net loss and if profit exceeds these expenses, the result is net profit. Only indirect expenses are taken to profit and loss account and deducted from gross profit. Such expenses are of the following types :

(i) Selling and Distribution Expenses :
Godown rent, advertisement, agents, salaries, commission and bad debts etc.

(ii) Management or Office Expenses :
There are the expenses paid from office for whole of the business. It includes office salaries and wages, insurance, rent, printing and stationary, postage and telephone, auditor's feel, legal expenses, bank charges etc.

(iii) Financial Expenses:

The expenses which are incurred to obtain necessary finances for the business are called financial expenses. These include interest on capital, interest on loans, cash discount etc.

(iv) Maintenance and Depreciation Expenses:

These expenses include repairs to building, machinery and furniture, depreciation on fixed assets. All these expenses are shown on debit side of profit and loss account.

(v) Credit side of profit and loss accounts:

On credit side of profit and loss account we record various income such as discount received, commission received, rent received, interest received, income from investment. Profit on sale of assets, bad debt recovered and dividend received.

7.4 PREPARATION OF PROFIT AND LOSS ACCOUNT

The gross profit from trading account is transferred to profit and loss account. With the result that trading account shall be closed and profit and loss account is opened. Then the profit and loss account is debited with all indirect expenses which results in the closing of all accounts relating to indirect expenses. The profit and loss account is then credited with the accounts of income by which all income accounts are closed. After debiting all indirect expenses and crediting the incomes, the differences of two sides of profit and loss accounts shall be net profit or net loss. If credit side is more, the result is net profit and if debit exceeds the result, is net loss.

7.5 Performa of Profit and Loss Account

Profit and Loss Account for the year ending.

Particulars	Amount	Particulars	Amount
To selling and distribution :			
Expenses		By Gross Profit	
Godown rent		By Discount received	
Packing expenses		By Income from investment	
Advertising		By interest received	
Agents Commission		By Dividends	
Bad Debts		By Interest on drawings	
To Management expenses :			
Office Salaries and Wages			
Rent & Taxes			
Lighting and insurance			
Printing and Stationary			
Postage and Telephone			
Legal Expenses			
Audit Fees			
General Expenses			
To Financial expenses :			
Discount allowed			
Interest on capital			
Interest on loans			

Self-Check Exercise

3. What is the primary purpose of a profit and loss account?"

7.6 BALANCE SHEET

A balance sheet is a statement of financial position of a concern at a given date. Therefore, balance sheet shows the financial position of a concern and it shows its financial position on a given date, usually the last date of accounting period. Balance sheet is prepared from the trial balance after all the balances of nominal accounts are transferred to trading and profit and loss account and the corresponding accounts in ledger are closed. Balances. left in the trial balance either represent assets or liabilities existing at the date of the financial close. All assets and liabilities are displayed in the balance sheet according to certain principles such as :

(i) All real and personal accounts having debit balance should be shown on asset side of balance sheet.

(ii) All the real and personal accounts having credit balances should be shown on liability side of balance sheet.

Classification of Assets

(I) Fixed Assets :

These assets with a durable nature are used in business and are acquired to be retained permanently for the purpose of carrying on the business such as land, building machinery and furniture etc.

(ii) Floating or Circulating Assets :

Those temporarily held assets which are meant for resale or which frequently undergo change e.g. Cash, stock, stores, debtors and bills receivable.

(iii) Fictitious Assets :

Those assets which are *not* represented by any thing concrete or tangible. Preliminary expenses, debit balance of Profit and losses account are the examples of such assets. Classification of Liabilities:

(i) Fixed Liabilities :

Those liabilities which are to be redeemed after long period of time. These include long term loans.

(ii) Current Liabilities :

Those liabilities which are to be redeemed in near future usually within a year. Trade creditors, bank loan, bills payable etc. are the examples of current liabilities.

(iii) Contingent Liabilities :

These are not actual liabilities but their becoming actual liability is contingent on the happening of a certain event. In other words they would become liabilities in the future provided the contemplated event occurs. If it does not occur no liability is incurred. Since such a liability is not an actual liability, it is not shown in balance sheet. Usually it is mentioned in the form of footnote.

Self-Check Exercise

4. What is the main objective of a balance sheet?"
5. "What does a balance sheet show about a business?"
6. What are the two main components of a balance sheet?"

Form of Balance Sheet

A Balance sheet is divided into two parts, on the left-hand side are listed various liabilities and capital and on the right hand side are listed various assets. The left-hand side is termed as liabilities and right hand side is titled assets.

7.7 PERFORMA OF BALANCE SHEET :

Balance Sheet as on,

Particulars	Amount	Particulars	Amount
Bills Payable		Cash in hand	
Loans		Cash at Bank	
Sundry Creditors		Investments	
Outstanding expenses		Sundry debtors	
Reserves		Bills receivable	
Capital		Stock-in-trade	
		Loose Tools	
		Fixtures and fittings	
		Plant and Machinery	
		Building	
		Land	
		Goodwill	

7.8 Illustration: Prepare trading and Profit and Loss account and balance sheet from the following Trial Balance.

Trial Balance as on .....

	Dr. Rs.	Cr. Rs.
Ram's Drawing and capital	15,000	40,000
Leasehold land	25,000	
Freehold premises	20,000	
Goodwill	7,000	
Trademarks	13,000	
Machinery and Plant •	15,000	
Fixtures and fittings	2,000	
Stock at commencement	18,000	
Bill receivable and payable	4,000	6,000
Sundry debtors and creditors	16,000	24,000
Purchases and Sales	80,000	1,50,000
Returns	1,000	2,000
Carriage inwards	15,000	
Carriage outwards	5,000	
Freight duty	1,200	
Manufacturing wages	22,000	

Coal, Fuel gas	800	
Factory expenses	4,500	
Salaries	18,000	
Rent, taxes and insurance	6,000	
Commission	25,000	
Interest		3,000
Discount	4,000	6,000
Stationary	500	
Trading Expenses	1,800	
Cash in hand	700	
Bankers		39,000
	2,70,000	2,70,000

Solution :

Trading and Profit and Loss Account of Mr. Ram for year ending 1997

To Opening Stock	18,000	Sales 1,50,000	
To Purchases 80,000		(-) Returns 1.000	1,49,000
(-) Returns 2.000	78,000		
To Carriage inwards	1,500		
To Freight Duty etc.	1,200		
To Manufacturing Wages	22,000		
To Coal, fuel gas	800		
To Factory expenses To Gross Profit c/d	4,500 23,000		
	1,49,000		1,49,000
To Carriage outward	500	By Gross Profit b/f	23,000
To Salaries	18,000	By Interest	3,000
To Rent, Taxes, Insurance	6,000	By Discount	6,000
To Commission	2,500	By net loss	1,300
By Discount	4,000		
To Stationary	500		
To Trading Expenses	1,800		
	33,300		33,300

Balance Sheet of Mr. Ram as on 31st December, 1997

Labilities		Amount	Assets	Amount
Bill Payable		6,000	Cash in hand	700
Sundry Creditors		24,000	Sundry debtors	16,000
Bankers		39,000	Bills Receivable	4,000
Capital :			Fixtures and Fittings	2,000
Opening Balance	40,000		Machinery and Plant	15,000
(-) Loss	1,300		Trade Mark	13,000
(-) Drawings	5,000	33,700	Lease hold land	25,000
			Freehold Premises	20,000
			Goodwill	7,000
		1,02,700		1,02,700

Illustration : Prepare Trading, Profit and Loss account for the year ending 31 Dec. and a Balance Sheet as on that date from the following Trial Balance :

	Dr. Rs.	Cr, Rs.
Capital	--	10,000
Cash	1,500	—
Bank overdraft	--	2,000
Purchase and Sales	12,000	15,000
Returns	1,000	2,000
Establishment expenses	2,200	—
Taxes and Insurance	500	—
Bad Debts and B/D reserve	500	500
Debtors and Creditors	5,000	2,000
Commission	—	500
Deposits	4,000	—
Opening Stock	3,000	—
Drawings	1,400	—
Furniture	600	--
B/R and B/P	3,000	2,500
	34,700	34,700

Adjustments :

1. Salaries Rs. 100 and taxes Rs. 200 are outstanding but insurance Rs. 50 is prepaid.
2. Commission Rs. 100 received in advance for the next year.
3. Interest Rs. 210 is to be received on deposits and interest on Bank overdraft Rs. 300 is to be paid.
4. Bad Debts reserve is to be maintained at Rs. 7,000.
5. Depreciation on Furniture is provided at 10%.
6. Stock on at the end is Rs. 4,500.

Solution :

Trading and Profit & Loss Account
For the year ending 31 Dec.

Particulars		Amount (Rs.)	Particulars	Amount (Rs.)
To Opening Stock		3,000	By Sales 15,000	
To Purchases	12,000		Less : Returns 1.000	14,000
Less Returns	2,000	10,000	By Closing Stock	4,500
To Gross profit c/d		5,500		
		18,500		18,500

To Establishment Expenses		2,200	By Gross Profit b/d	5,500
To Outstanding		100	By Commission 500 Less : Commission in advance 100	400
To Taxes & Insurance	500			
Add : Outstanding Tax	200		By Accrued Interest	210
	700		By Bad Debts Reserve	700
Less : Prepaid Insurance	50	650		
To Outstanding Interest on Bank Overdraft		300		
To Bad Debts		500		
To New Reserves for bad debts	500			
Furniture		60		
To Net Profit		2,000		
		6,810		6,810

Balance Sheet on 31st December,

Liabilities		Amount (Rs.)	Assets		Amount (Rs.)
Bills Payable		2,500	Cash in hand		1,500
Creditors		2,000	Bill Receivable		3,000
Outstanding Exp. : Taxes		200	Debtors	5,000	
Establishment Exp.		100	Less : Provision		
Advance Commission			for bad debts	1,000	4,000
Overdraft	2000		Closing stock		4,500
Add : Outstanding			Prepaid Insurance		
Interest	300	2,300			
Capital	10,000		Fixed Deposit	4,000	
Add : Net Profit	2.P9P		Add : Accrued Interest	210	4,210
	12,000				
Less : Drawing	1.400	10,600	Furniture	600	
			Less : Depreciation	60	540
		17,800			17,800

Illustration : Following is the Trial Balance of Amit Sales Corporation as on 31Dec.

TRIAL BALANCE

Plant & Machinery	5,000	Capital	4,000
Furniture fit fittings	260	Creditors	5,200
Stock	4,800	Bills payable	560
Motor Van	1,200	Prov. for D. Debts	250
Debtors	4,570	Returns outward	550
Cash	40	Discount Received	370
Bank	650	Sales	48,000

Wages	15,000		
Salaries	1,400		
Purchases	21,350		
Bills Receivables	720		
Returns Inward	930		
Drawings	700		
Rent	600		
Factory Lighting	80		
Insurance	630		
G. Expenses	100		
Bad Debts	250		
Discount Allowed	650		
	58,930		58,930

The following adjustments are to be made :

(i) Stock on 31 Dec. Rs. 5,200.

(ii) 3 months factory lighting is due Rs. 30.

(iii) 5% depreciation to be written off on furniture.

(iv) Write off further bad debts Rs. 70

(v) The provision for doubtful to be increased to Rs. 300 and provision on for discount on debtors @ 2%

(vi) During the year machinery was purchased for Rs. 2.000 but it was debited to purchase account.

You are required to make Trading 86 Profit & Loss account for the year ending 31 Dec. 1997 and Balance Sheet as on that date :

Trading and Profit and Loss Account for the year ending 31st Dec.

Particulars		**Amount (Rs.)**	**Particulars**		**Amount (Rs.)**
To Opening Stock		4,800	By Sales Less : Returns	48,000	
To Purchases	21,350			930	47,070
Less : Returns	550				
Machinery Purchased	2.000	18,800	By Closing Stock		5,200
To Factory Lighting	80				
Add Outstanding	30	110			
To Gross Profit c/d		13,560			
		52,270			52,270

To salaries		1,400	By gross profit b/d	13,560
To rent		600	By Discount Received	370
To Insurance		630		
To General Expenses		100		
To Discount Allowed		650		
To Bad Debts	250			
Add : Further	70			
New Prov.	300			
	620			
Less : Old Prov.	250	370		
To provision for Debtors		84		
To Depreciation on furniture		13		
To net profit		10,083		
		13,930		13,930

Balance 8heet at on 31st December,

Liabilities		Amount <Ra.)	Assets		Amount (Rs.)
Capital Account	4,000		Plant & Machinery *.	5000	
Add : Net Profit	10,083		Add : Purchased *	2000	7000
	14,083		Furniture & Fittings	260	
Less : Drawings	700	13,383	Less: Depreciation	13	247
Sundry Creditors		5,200	Closing Stock		5,200
Bills Payable		560	S. Debtors	4,570	
Outstanding Factory Lighting		30	Less : Bad Debts	*13*	
				4,500	
			Less : New Prov.	300	
			Less : Prov for Discount	84	4,116
			Bills Receivable		720
			Cash		650
			Bank		40
		19,173			19,173

Illustration : X and Y are equal partners in a business. The following were the balances of the firm as on 31st March, :

	Rs.
Taxes and insurance	1,120
Creditors	7,920
Provision for bad and doubtful debts	435
Bad debts	392
General charges	1000
Advertisement	3800
Rent received	138
Cash in hand	510
Purchases	63,220
Motor lorry	3,250
Carriage on purchases	2,300
Repairs and renewals	1,200
Allowances received from creditors	2,400
Coal consumed	6,718
Plant and machinery	25,000
Wages	6,780
Land and building	13,840
Salaries	2,863
Debtors	8,000
Sales	75,000
Cash at bank	2,000
Stock on 1-4-1986	25,000
X's Loan Account	10,000
X's Capital Account	49,400
X's Drawing Account	4,250
Y's Capital Account	30,000
Y's Drawing Account	2,050
Stock of Coal	2,000

Prepare trading and profit & loss account for the year ended 31st March, and a balance sheet as on that date after making the following adjustments:

1. Stock on 31st March, was Rs. 30,000
2. Transfer Rs. 3,000 from purchases account and Rs. 250 from wages account to land and buildings account as these sums were actually incurred on extensions to land and buildings.
3. X's loan bears interest @ *7 Wo* per annum.
4. Increase the provision of doubtful debts to Rs. 543.
5. Write off one-half of advertisement expenses.
6. Interest on partner's capital account is to be allowed @ 5 per cent per annum.
7. Write off 10 per cent on motor lorry and plant and machinery.

Solution :

Trading and Profit & Loss Account of M/a X and Y
for the year ending 31st March

Particulars	Amount (Rs.)	Particulars	Amount (Rs.)
To Opening Stock	25,000	By Sales	75,000
To Purchases 63,220		By Closing Stock	30,000
Less : Allowances			
from creditors 2,400			
Transferred to			
land &building 3,000 5.400	57,820		
To Carriage on Purchases	2,300		
To Coal Consumed	6,718		
To Wages 6,780			
Less transferred to land			
and building 250	6,530		
To Gross Profit c/d	6,632		
	1,05,000		1,05,000
To Taxes & Insurance	1,120	By Gross Profit b/d	6,632
To General charges	1,000	By Rent Received	138
To Advertisement 3,800		By Net Loss	9,358
Less carried			
forward 50% 1.900	1,900		
To Repair fi& Replacement	1,200		
To Salaries	2,863		
To Interest on X's loan	750		
To Bad debts :			
w/off during the year 392			
Add new provision 543			
935			
Less old provision 435	500		
To Interest on capital :			
X 2,470			
Y 1.500	3,970		
To Depreciation			
on motor lorry 325			
on plant &			
machinery 2.500	2,825		
	16,128		16,128

Balance Sheet of M/s X and Y
as on 31st March

			Rs.			Rs.
Creditors			7,920	Cash in hand		510
X's loan account			10,000	Cash at bank		2,000
Capital :				Debtors	8,000	
X's capital-opening balance		49,400		*Less* provision for bad debts	543	7,457
Add interest on capital		2.470		Closing stock		30,000
		51,870		Motor lorry	3,250	
Less : Loss ½	4,679			*Less* depreciation	325	2,925
Drawing 4,250		8.929	42,941	Plant & machinery	25,000	
Y's capital-opening balance		30,000		*Less* depreciation	2.500	22,500
Add interest on capital		1.500		Land & building		
		31,500		Balance as per T/B	13,840	
Less: Loss 1/2 4,679				*Add* extension		
Drawing 2.050		6.729	24,771	during the year	3.250	17,090
Outstanding interest			750	Stock of coal		2,000
				Unexpired advertising		1,900
			86,382			86,382

Keywords:-
Closing Entries:-Journal entries made to transfer balances from temporary accounts to permanent accounts at the end of an accounting period.

Adjustments:- Changes made to financial records to ensure accuracy and conformity with accounting principles at the close of an accounting period.

7.10 Self-Check Exercise
Short Answer type Questions
1. What is the primary purpose of preparing final accounts?
2. Why are closing entries necessary in the preparation of final accounts?

Long Answer type Questions
3. Explain the significance of preparing final accounts for a business?

7.11 Self-Check Exercise (Answer Key)
1. Calculate, 2. Sales and Costs, 3. Summarize, 4. Present, 5. Financial Position, 6. Assets and Liabilities

7.12 Recommended Texts and Readings:

Gary L. Sundem, John A. Elliott and Donna R. Philbrick (2013).
Introduction to Financial Accounting, Pearson Student Edition.

MBA-Distance
Education (First Year)

AFM 105
ACCOUNTING FOR MANAGEMENT

Lesson No. 8

AUTHOR : Ms. HARPREET KAUR

MANAGEMENT ACCOUNTING-AN INTRODUCTION

STRUCTURE

Management Accounting and Financial Statements

8.1 Introduction

Management Accounting is the application of appropriate techniques and concepts in processing the historical and projected financial and economic data of an organization. This assist management in establishing a plan for reasonable economic objectives and in making rational decisions with a view towards achieving these objectives. It includes the techniques and concepts necessary for effective planning for choosing among alternative business actions and for controlling through the evaluation and interpretation of performance. Its study involves considerations of ways in which accounting information may be accumulated analyzed and presented in relation to specific problems, decisions and day to day tasks of business management. In short, we can say that it keeps management to take business decisions by measuring analyzing and communicating economic and financial data. Management accountant occupies an unique position in any organization, apart from top management, he knows maximum about all the functions of the given business. Management accountant must gather information from every area and level of the organization.

8.2 OBJECTIVES OF MANAGEMENT ACCOUNTING

Following are some important objectives of management accounting:-

1. To assist management in promoting efficiency. Here best possible service to customers, investors and employees are included in efficiency.
2. To formulate policy and planning, management accountant should provide to

management information so that the management should formulate a plan for the future. There should be proper allocation of responsibilities to the person and there should be well designed organization for carrying out the plan.

3. The actual work done should be compared with standards to enable the management to control the performance effectively.
4. Preparation of budget covering all aspects of business e.g. production, selling, distribution, research and finance.
5. Analysis of financial and physical transactions to enable effective comparisons to be made between the forecast and actual performance.
6. Presenting to the management at intervals operating statements and short-term financial statements.
7. Interpretation of financial statements to enable the management to formulate future policy and operations.
8. The main objective of management accounting is to serve the need of management and to enable manager to manage better.
9. Management accounting keeps in the establishment of methods for controlling business operations by imparting information to those who need the same.
10. As the tax system is becoming complex day by day. Management accounting helps in assisting various tax liabilities to depositing correct amount of taxes which concerned authorities

8.3 FUNCTIONS OF MANAGEMENT ACCOUNTING

Management accounting is a part of accounting. The essence of the management process is decision-making. The process of management accounting involves identification measurement, accumulation, presentation, Analysis, Interpretation and communication of data in such a way that it helps management in controlling the enterprise in an efficient manner. Some of the functions of management accounting areas follow.

1. Planning

In management account first of all planning is done then targets are fixed which are to be achieved in future. Long-term and short-term targets are fixed. The targets which are fixed should always be achieved only when these can serve the purpose. These targets are generally fixed by top managers based upon past performances.

2. Accumulation & Modification of Data

- Here is data is modified in such a way that it becomes useful for management purposes and then classified and recorded in the manner required. In this way the data is divided in groups and the date becomes more understandable and useful according to the requirements of the management.

3. Analysis and Interpretation

Management Accounting analyses and then interprets the financial data in a simple way so that one can understand it easily. The financial data is collected in the technical form and then management accounting interprets in the simpler non-technical language.

4. Control

The important aspect of management accounting is to control i.e. to take corrective measures if the performance is not up to the mark. Control keeps improving the future activity as to overcome the mistake of the past in future, without control or corrective measures whose process has no meaning.

5. Communication

Management accounting establish link between the organization and the outside world. Reports are prepared, on the basis of which major decisions are taken. The activities of the concern arc communicated to outsiders such as bankers, investors, creditors, Govt, agencies etc.

8.4 NATURE OF MANAGEMENT ACCOUNTING

Management accounting is that part of accounting which facilitates the management is taking decisions.

In the earlier times accounting system could not, sufficiently emphasized management aspect of its role due to more concentrating towards external reporting. But now the gap has narrowed down considerably. As the internal management of the business became more difficult due to complexity of operations and growing business size, the focus of accounting was oriented towards the internal uses. The accounting profession has thus developed some important management tools, as standard costing and budgetary control.

Management accounting is a decision-making system as it presents accounting information in such a way as to assist management in the creation of policy and in the day- to-day operation of an undertaking. The task of management accounting is not to make decisions rather it keeps the management in decisions making process.

Management accounting is future oriented. It helps to evaluate future as it becomes present with the help of standard costs and budgets while preparing budgets, accounting provides for projection and planning future activities. The activities are performed, budgeted and actual data are collected and reported. Then the remedies or measures are taken by management so as to ensure that performance should be within the limits of standards and budgets in future.

Management accounting is a systematic approach to planning and control functions of management. It generates information for establishing plans and controls. It provides for a system of getting standards, plans or targets and reporting variances between planned and actual performances for taking corrective measures, it also facilitates management in reporting the results, it cover both the internal and external reporting.

Self-Check Exercise

1. Purpose of Management Accounting?
2. Primary Focus of Management Accounting?
3. Time Horizon in Management Accounting?

8.5 RELATIONSHIP BETWEEN FINANCIAL ACCOUNTING AND MANAGEMENT ACCOUNTING

As we know that the financial accounting and management accounting are two interrelated parts of accounting system. Financial accounting provides the basic structure for collecting data. The data collection structure is suitably modified for accumulating information for management accounting purpose. So we can say that they are not inclusive of each other, they are supplementary in nature. In broader sense, management accounting includes financial accounting.

A line of distinction is drawn between financial accounting and management accounting some of the characteristics which distinguish management accounting and financial accounting are discussed below:

Structure

Our aspect of the difference between financial accounting and management accounting relates to their respective structure or formats of presentation of information. Financial accounting can be said to have a single unified 'structure* in the sense that the

information relating to the operations of various enterprises is presented more or less on a uniform basis. This is so because financial accounting has the primary objective of providing information to outside parties, namely, shareholders, creditors, government, the general public and so on. In contrast, management accounting is concerned with accounting information that is useful to management only. Since this type of accounting is prepared for internal use, its structure varies depending upon the requirements and circumstances of a particular case.

Principles

The accounting system has developed certain principles for preparing and presenting financial reports for external uses. Financial accounting adhesive to these generally accepted accounting principles. This introduces consistency and meaningfulness of data analyze performance trend over year when some set of generally accepted principles are followed by all firms. Management accounting, in contrast, is not based on any set of accepted rules of principles. Every enterprise uses its own procedures and principles for preparing reports of internal uses, depending on it requirements.

Statutory

The third difference between financial and management accounting pertains to the need of preparing such accounts. Financial accounting, caters the need of outsiders, who on the basis of financial statements commit their funds in the business. The preparation of such accounts is statutory obligation. In contrast, preparation of accounts in management accounting in entirely optional. These are prepared only if these are useful to management. These are not outside requirement for its preparation. The format as also the items to be included are exclusively dependent on management discretion.

Historical

As we know end-product of financial accounting are statement like Profit and Loss account and Balance sheet. While these statements report the financial position on a particular date and the result of the operations of the firm during the accounting period. So they record only the transactions which have happened in past, therefore they are called historical accounts. On the other hand, management accounting does not record the financial history of an enterprise. It is future- oriented and aims at providing for budgeting and planning and so on.

Reporting

Financial accounts are prepared to find out profitability and financial position of the concern. These reports are useful for outsiders like bankers, investors, shareholders, Govt, agencies etc. Management accounting reports are meant for internal use only. These are prepared for the benefit of different levels of management. Financial accounting reports like Balance-Sheet and Profit and Loss account are prepared for a specific period and on a particular date whereas, there is no such binding for preparing management accounting reports.

Timings

Financial accounting adopts generally one year period for reporting financial position of any concern. On the other hand, management accounting reports are for shorter duration. In some companies budgets are prepared monthly or quarterly and accordingly reports are prepared. Sometimes long-term plans like capital expenditure plans are made for five or more years,

Audit

Under company's law auditing of financial accounts is compulsory. But there is no compulsion of the audit of management accounts. Sometimes it is even not possible to audit the management accounts as projected data is also used in it.

The above discussion clearly showed the differences between the financial accounting and management accounting. Nevertheless, there are similarities between them. They represent two parts of the accounting system of a business enterprise. They a-e similar as they both use the operating information for the preparation of accounts. Moreover, the principles used in financial accounting are likely to be relevant for the purposes of management accounting also. Management cannot base its reporting system on unverifiable, subjective estimates of profits.

8.6 ADVANTAGES OF MANAGEMENT ACCOUNTING

The following advantages are derived from management accounting: -

1. It increases efficiency of business operations.
2. The activities of a business are well regulated by installation of efficient system of planning and budgeting.
3. It enables the actual performance to be measured by a comparison with the budget.
4. It enables the business to get maximum return on capital employed.
5. It enables the management to improve its service to its customers.
6. It creates harmony in the relations between management and labour.

8.7 LIMITATIONS OF MANAGEMENT ACCOUNTING

Though management accounting is very helpful to management, still its effectiveness is limited by a number of factors. Some limitations of management accounting are as under :

1. Management accounting is based on data or accounting information supplied by financial and cost accounting and historical data is used to make future decisions. The correctness and effectiveness of managerial decisions much depends upon the quality of data used.
2. There is every likelihood of personal bias in analysis and interpretation. The interpretation of financial information depends upon the capability of interpreter as one has to make a personal judgement.
3. The use of management accounting requires the knowledge of number of subjects like economics, statistics, management, engineering etc. So management accountant should be expert in all these areas, only then he will be able to take best decisions.
4. Management accounting is only in a developmental stage, it has not yet reached and final stage, it will take sometime before management accounting takes a final shape.
5. Though management accounting provides scientific analysis of various situations and enables decisions taking based on facts and figures, there is a tendency to make decisions intuitively. Management may avoid a lengthy course of deciding things and may take an easy course of arriving at decisions
6. Introduction of management accounting system is a costly affair and can be used by big concerns only. The installation of a management accounting system needs an elaborate organizational system which small concerns cannot afford.

7. Management accounting does not provide an alternative to administration. The tools and technique of management accounting provide only information and not decisions.
8. The installation of management accounting involves basic change in organizational set up. Now rules and regulations are also required to be framed which affect a number of personnel and hence there is a possibility of resistances from some quarters or the other.

Self-Check Exercise

4. Key Characteristics of Management Accounting Information?
5. Primary Users of Management Accounting Reports?

FINANCIAL STATEMENTS

8.8 Introduction

Financial Statements, as used in corporate houses are set of reports and schedules which an accountant prepares at the end of period of time for a business enterprise. It consists of data according to logical and consistent accounting procedures. These statements are outcome of summarizing process of accounting. These are interim reports prepared annually and reflecting the of life of enterprise. Its purpose is to convey understanding of some financial aspects of business firm.

8.9 Definitions

According to John N. Myer, "The financial statement provide a summary of the accounts of a business enterprise, the balance-sheet reflecting the assets, liabilities and capital as on a certain data and the income statements showing the results o:' operations during a certain period*.

According to Smith &Ashburne, "Financial Statements are the end product of financial accounting in a set of financial statements-prepared by the accountant that purpose to reveal the financial position of the enterprise, the result of recent activities and an analysis of what has been done with earnings".

Nature of financial statements

According to American Institute of Accountants, financial statements reflect a combination of :

(i) Recorded facts
(ii) Accounting conventions
(iii) Postulates
(iv) Personal judgment

(i) Recorded Facts

Recorded facts are the balances of various accounts appearing in the ledgers such as cash in hand and bank, bill receivables and payable, debtors, creditors, sales, stock, fixed assets etc. Records are maintained on basis of actual cost. Facts which are not recorded are not shown, however material they might be.

(ii) Accounting Conventions

While preparing financial statements, certain accounting conventions are followed e.g. convention of disclosure, consistency, conservatism and materiality.

(iii) Postulates

Accountants make various assumptions. Following are the postulates:

Business entity concept, going concern concept, cost concept, dual aspect concept, money measurement concept, accounting period concept, realization concept and matching

concept.

(iv) Personal Judgment

In spite of many postulates being followed, but personal judgments have important bearing on financial statements. Judgment of an accountant plays a vital role e.g. there are many methods of valuing inventory, it is the accountant to decide which method to use. Accountant decided to adopt one of the methods of depreciation. Similarly the mode of amortization of fictitious assets also depends on personal judgment.

8.10 ATRIBUTES OF FINANCIAL STATEMENTS

(a) Relevance

Financial statement prepared must be relevant for the purpose they are supported to serve. No relevant and material information should be held back from the public. The companies act of various countries provide for penalties for non-disclosure of material information.

(b) Accuracy and Freedom from Bias

Financial statements should convey a full and correct idea about the progress, position and prospects of an enterprise. For this purpose they must be accurate. Those who prepare statements should not allow their personal prejudices to colour the facts.

(c) Comparability

It increases the utility of statement. Comparison with previous statement helps in assessing the performance and trends in progress and position of an enterprise.

(d) Analytical Presentation

The financial statements should be prepared in a classified form so that better and meaningful analysis can be made. Classification helps in speedier analysis of the documents.

(e) Promptness

An undue delay in preparation would reduce significance of statements. Time lag between end of the period and preparation may present difficulty in tracing the causes of the results as disclosed by the statements.

(f) Authenticity

The financial statements in order to be accepted as reliable must be reviewed and authenticated by an independent and capable person known as auditor. Statements, audited by recognized auditors are accepted at their face value.

(g) Compliance with Law

Statement must meet the requirements of law, if any, in matter of form, contents and disclosures, procedures and methods. In India, companies are required to present their financial statements according to the provisions of Sec. 211 of Company Act 1956.

8.11 OBJECTIVES OF FINANCIAL STATEMENTS

The Accounting Principle Board of America mentions the objectives of financial statement as follows :

(a) To provide reliable financial information about economic features and obligations of a business enterprise,

(b) To provide reliable information about recourse less obligations of an enterprise that result from its activities.

(c) To provide information that assists in estimating the earning potential of a business.

(d) To provide other needed information that assists in estimating the change in economic recourse.

(e) To provide information for the need ofthe business.

8.12 IMPORTANCE OF FINANCIAL STATEMENTS

Financial statements are the mirrors which reflect the financial position and operating strength or weakness of the concern. The utility of the statements is discussed below:

(a) Management

The financial statements are useful for assessing efficiency of various cost centres. Management exercises the cost control through these statements. The efficient and inefficient points are highlighted.

(b) Creditors

Trade creditors are to be paid in short period out of current assets. Creditors are interested in current solvency. Current ratio and liquid ratios enable creditor to assess the financial position.

(c) Bankers

Bankers provide short-, medium- and long-term loans to business houses. Bankers before providing loans analyze the previous financial statements and look for repaying capacity of business houses.

(d) Investors

Investors include short- and long-term investors. It is through critical examinations of financial statements that they come to know about efficiency and effectiveness of management position, progress of a firm. Investors will not analyze the present financial position but will also study future prospects and expansion plans.

(e) Labour and Trade Unions

These unions provide service and protection to members. They may analyze the financial statements for providing facilities to those members.

(f) Government

Govt, determines the tax liability on the basis of these financial statements. Statements enable the Govt, to judge whether rules and regulations are followed by business unit or not. These statements form the base of framing/amending various laws.

(g) Country and Economy

Economic progress of a country is to great extent dependent on rise and growth of joint stock companies. Financial statements provide an opportunity for critical assessment of the worth of a company and protect innocent public increases their confidence and help faster economic progress.

(h) Stock Exchange

These statements enable the stock brokers to judge the financial position of different concerns. The fixation of prices for these securities is also based upon these statements.

8.13 ANALYSIS AND INTERPRETATION OF FINANCIAL STATEMENTS

To analyze mean to arrange the data in similar groups. The data in the statements is rearranged and divided into suitable parts. To interpret means to draw the conclusion. The analysis and interpretation of the financial statements is to judge their meaning and significance. An opinion is formed in respect of financial condition of the concern.

The analysis and interpretation bring out the hidden mystery behind the figure. The

interpretations involves comparison for similar figures in different periods, different figures in same period.

Procedure of Analysis and Interpretation

(1) The analyst must be familiar with accounting principles and postulates. He should know, plan and policies of management so that everything is going on as planned.
(2) The extent of analysis should be determined so that the sphere of work may be decided e.g. If aim is to study financial position then balance sheet analysis is required but if earning capacity is to be known the income statement is analyzed.
(3) Financial data should be arranged and organized according to similar data under same heads e.g. all the fixed assets are shown under the heading 'Fixed Assets".
(4) Relationship is established among financial statements with help of tools and techniques of analysis such as ratios, trends, funds flow etc.
(5) Information is interpreted in similar and understandable way.
(6) The conclusions drawn from interpretations are presented to the management in the form of reports.

8.14 METHODS OF ANALYSIS AND INTERPRETATION

Following are the methods of analysis and interpretation :

(1) Comparative Statements
(2) Trend Analysis
(3) Common size statements
(4) Ratio Analysis

8.14.1 Comparative Statements

These statements are the statements of financial position of concern at different periods of time. The elements of financial position are shown in comparative form. The figures for two or more periods are placed side by side to facilitate comparison. Both the income statements and a balance sheet can be prepared in the form of comparative financial statements.

Comparative Income Statement

Income statement discloses Net Profit or Net Loss on account of operations. A comparative income statement will show absolute figures for two or more periods, the change from one period to another adds percentage. Since, the figure for two or more periods is shown side by side, the reader can quickly ascertain whether sales have increased/ decreased, whether cost of sales have increased/decreased.

Comparative Balance Sheet

Used for companies assets and liabilities and finding out any change in these items. Guidelines for Interpreting Income Statements

(1) Study the amount of gross profit (Sales - Cost of Goods sold}.
(2) Secondly, study the operational profits, i.e. from Gross Profit deduct operating expenses.
(3) An increase/decrease in net profit will give an idea about overall profitability of the concern.
(4) An opinion should be formed about profitability of concern and it should be given at end.

Self-Check Exercise

6. Which financial statement reports a company's revenues and expenses over a specific period?
   A) Balance Sheet
   B) Income Statement
   C) Cash Flow Statement
   D) Statement of Retained Earnings
7. Which financial statement provides a snapshot of a company's financial position at a specific point in time?
   A) Income Statement
   B) Balance Sheet
   C) Cash Flow Statement
   D) Statement of Retained Earnings

Example :

Income statement of Gangoa and Co. are as under for year 1996 &97. Rearrange the figures in comparative form and study profitability position :

	1996 Rs. (in Lakhs)	1997 Rs (in Lakhs)
Net Sales	785	900
Cost of goods sold	450	500
Operating Expenses :		
General and Administrative Expenses	70	72
Selling Expenses	80	90
Non Operating Expenses :		
Interest paid	25	30
Income Tax	70	80

Solution : Comparative Income Statement of Gangoa and Co.

	31 Dec. 1996 Rs. (in Lakhs)	31 Dec. 1997 Rs. (in Lakhs)	Increase/ Decrease (in Lakhs)	% of Increase/ Decrease
Net Sales	785	900	+ 115	• +14.6
Less Cost of Sales	450	500	+50	+ 11
Gross Profit	335	400	+ 65	19.40
Operating Expenses :				
General & Ad. Expenses	70	72	+2	+2.8
Selling Expenses	80	90	+ 10	11.25
Total	150	162	+ 12	+8
Operating Profit	185	238	+ 53	+28.65
Less Interest Paid	25	30	±5	+ 20
Net Profit Before Tax	160	208	48	30.00
Less Income Tax	70	' 80	±12	+ 14.3
Net Profit After Tax	90	128	38	42.22

COMPARATIVE BALANCE SHEET GUIDELINES FOR INTERPRETATION

(1) First of all, current financial positions/ short term financial position should be studied. For this working capital should be studied. Working capital - current Assets - Current liabilities.
After studying the changes in current financial position, liquidity position should be studied. If liquid assets like cash in hand, cash at bank, B/R, debtors etc. show increase in second year than in first year, this will improve liquidity position of the concern.

(2) After studying the short-term position, the long term financial position can be analyzed by studying' the changes in fixed assets, long term liabilities and capital. The proper financial policy of the concern will be to finance fixed assets by issuing long term securities such as debentures, bonds etc. An increase in fixed assets should be

Compared with the increased in long term loans and capital. The nature of assets which face increased/ decreased should be studied.

(3) Next aspect to be studied in a comparative balance sheet is the profitability of concern. The study of increase/ decrease in retained earnings, various resources and surpluses etc. will enable the interpreter to see whether the profitability has improved or not. The decrease in P/L Account etc. means issue of dividend, issue of bonus shares etc.

(4) At the end, opinion should be formed about financial position. If short term financial position is good, it does not mean that the long-term position has to be good and vice versa.

Illustration : Following is the balance sheet of Harry Pvt. Ltd. for the year 1995-96. Prepare comparative Balance Sheet

Balance Sheet as on 31st Dec.

Liabilities	1995	1996	Assets	1995	1996
Equity Share Capital	6,00,000	8,00,000	Land & Building	3,70,000	2,70,000
Reserves & Surpluses	3,30,000	2,22,000	Plant & Machinery	4,00,000	6,00,000
Debetures	2,00,000	3,00,000	Furniture & Fixture	20,000	25,000
Long Term Loans on Mortgage	1,50,000	2,00,000	Other Fixed Assets	25,00C	30,000
Bills Payable	50,000	45,000	Cash in Hand & Bank	20,000	80,000
Sundry Creditors	1,00,000	1,20,000	Bill Receivable	1,50,000	90,000
Current Liabilities	5,000	10,000	Debtors	2,00,000	2,50,000
			Stock	2,50,000	3,50,000
			Prepaid Expenses		2,000
	14,35,000	16,97,00		14,35,000	16,97,000

Solution : Comparative Balance Sheet of Harry Pvt. Ltd. as on Dec. 31,1996

Assets	1995	1996	Increase Decrease	%age of Increase/ Decrease
Current Assets Cash in Hand & at Bank	20,000	80,000	+60,000	- 30 %
Bills Receivable	1,50,000	90,000	-60,000	- 40 %
Sundry Debtors	2,00,000	2,50,000	+ 50,000	- 25 %
Stock	2,50,000	3,50,000	+ 1,00,000	- 40 %
Prepaid Expenses	—	2,000	+ 2,000	
Total Current Asset	6,20,000	7,72,000	1,52,000	+ 24.52 %
Fixed Assets Land & Building	3,70,000	2,70,000	- 1,00,000	- 27.03
Plant & Machinery	4,00,000	6,00,000	- 2,00,000	+50
Furniture & Fixture	20,000	25,000	+ 5,000	+25
Other Fixed Assets	25,000	30,000	+ 5,000	+20
Total Fixed Assets	8,15,000	9,25,000	1,00,000	+ 13.49
Total Assets	14,35,000	16,90,000	2,62,000	+ 18.26

Liabilities & Capital	1995 Rs.	1996 Rs.	Increase/ Decrease	%age of Increase/ Decrease
Current Liabilities				
Bills Payable	50,000	45,000	-50,000	- 10
Sundry Creditors	1,10,000	1,20,000	+ 20,000	+20
Other Current Liabilities	5,000	10,000	+ 5,000	+ 100
Total Current Liabilities	1,55,000	1,75,000	+ 20,000	+ 12.9
Debentures	2,00,000	3,00,000	+ 1,00,000	+50
long Term Loans on Mortgage	1,50,000	2,00,000	+ 50,000	+33
Total Liabilities	5,05,000	6,75,000	+ 1,70,000	+33.66
Equity Share Capital	6,00,000	8,00,000	+ 2,00,000 .	+33
Reserves & Surpluses	3,30,000	2,22,000	- 1,08,000	-32.73
Total	14,35,000	16,97,000	+ 2,62,000	+ 18,26

Interpretation

(1) The comparative balance sheet of the Co. reveals that during 1996 fixed assets increased by Rs, 1,10,000 long term liabilities rise by Rs. 1,50,000. Equity share capital increase by Rs.2,00,000. The situation depicts that policy of Co. is to purchased fixed assets from long term sources of finance,

(2) Current assets have increased by Rs. 1,52,000. The current liabilities have increased by Rs.60,000 Liquidity position has improved.

(3) Reserves and Surpluses have decreased from 3,30,000 to Rs. 2,22,000 which shows that Co. has utilized reserves and surpluses.

(4) Overall position is satisfactory.

8.14.2 **Trend Analysis.**

This method shows the trend (upward/downward) of information in financial statements. The information of No. of years is taken up and one year, generally the first year is taken up as 100 and trend ratios for other years are calculated on basis of base year.

e.g.: If purchase for the year 1992-97 are to be studied, then purchases of 1992 will be taken as base year (100) and %age for other years will be calculated on basis of year 1992.

Illustration

Purchases	Rs. in thousand	Trend	%age
1992	500	100	100
1993	300	300 / 500	60
1994	400	400 / 500	80
1995	550	550 / 500	110
1996	600	600 / 500	120

Illustration

From the following data relating to the assets side of balance sheet of SONU Ltd. for period ending 31 Dec. 1995 to 31 Dec. 1997. Calculate the trend, taking 1995 as base year.

(Rs. in 000)

	1995	1996	1997
Cash	100	120	80
Debtors	200	250	325
Stock	300	400 .	350 Other
Current Assets	50	75	125
Land	400	500	500
Building	800	1000	1200

Solution :

Comparative Balance Sheet of Sonu Ltd. As on 31st Dec. 1995-97.

	1995	1996	1997	1995	1996	1997
Cash	100	120	80	100	120	80
Debtor	200	250	325	100	125	163
Stock	300	400	350	100	133	117
Other Current Assets	50	75	125	100	150	250
Land	400	.500	500	100	125	125
Building	800	1000	1200	100	125	150

8.14.3 Common Size Statements

In this, the figures are shown as percentage of total assets, total liabilities and total sales. The total assets are taken as 100 and different assets are expressed as percentage of total similarly total liabilities are deal with.

Common Size Balance Sheet

In this each asset is expressed as ratio of total asset and each liability is expressed as ratio of total liabilities.

Asset side of balance sheet is shown as under :

	Rs.		% age
Cash	5,000	2.5	(5,000/2,00,000x100)
Debtor	20,000	10	(20,000/2,00,000x100)
Stock	25,000	12.5	
Land	50,000	25	
Plant	1,00,000	50	
	2,00,000	100	

Common size Income Statement

Sale figure is assumed to be 100 and all figures are expressed as percentage of sales

e.g. Income Statement of Co. for year 1995 & 1996 is an under :

	1995 Rs. In *000	1996 Rs. in *000
Sales	500	700
Misc. Income	20	15
	520	715
Expenses :		
Cost of Sales	325	510
Office Expenses	20	25
Selling Expenses	30	45
. Interest	25	30
	400	610
Net Profit	120	105
	520	715

Solution

Income Statement of Co. for year ending L995 and 1996

	1995 Rs. in *000		1996 Rs. in '000	
Sale	500	100	700	100
Less Cost of sale	325	65	510	72.86
Gross Profit	175	35	190	27.14
Operating Expenses:				
Office Expenses	20	4	25	3.58
Setting Expenses	30 .	6	45	6.42
	50	10	70	10.00
Operating Profit	125	25	120	17.14
Misc. Income	120	1	15 '	2.14
	145	29	135	19.28
Less Non operating Expenses	25	5	30	4.28
Net Profit	120	24	105	15

8.14.4 **Fund Flow Analysis**

It has become important tool in analytical kit of financial granting institutions and financial managers. Fund flow analysis reveal changes in working capital position. It has been discussed in details later on.

8.14.5 **Ratio Analysis**

Ratio shows the relationship in mathematical terms between two interrelated accounting figures. An analyst calculates different ratios for different purpose. It has been discussed in detail later on.

8.15 LIMITATIONS OF FINANCIAL STATEMENTS

(1) **Financial Statements are essential interim reports**

The profit shown by P/L A/C and financial position depicted by Balance-sheet is not exact. The exact position can be known when business is closed down.

(2) **Influence of Personal Judgment**

Many items are. left to the personal judgment of accountant e.g. method of depreciation, valuation of inventory. The soundness of such judgment will depend on competence and integrity of accountant.

(3) **Do not give exact position**

The values of fixed assets shown in the balance sheet neither represents the value for which can asset be sold or amount at which assets can be replaced. The business is assumed to be a going concern so assets are shown at cost less depreciation. There are some assets e.g. preliminary expenses, goodwill which will realize nothing at the time of liquidation but are still shown in balance sheet.

(4) **Non-Monetaryfacts are ignored**

Non-monetary facts though have important bearing on financial position are not considered because they can be measured in the terms of money, e.g. reputation of management, hard work of manager cooperation of workers are not shown in financial statement.

(5) Any change in accounting procedure by a firm may often make financial analysis misleading.

8.15 Keywords

Balance Sheet:- A financial statement that provides a snapshot of a company's assets, liabilities, and equity at a specific point in time.

Financial Ratios:- Quantitative metrics calculated from financial statements to assess a company's performance, financial health, and efficiency in areas such as profitability, liquidity, and leverage

8.16 Self-Check Exercise

Short answer type questions

1. What is the primary goal of management accounting?
2. How does management accounting differ from financial accounting?

Long answer type questions

3. Explain the purpose and importance of the income statement in financial reporting. How does it differ from other financial statements, and what key information does it provide to stakeholders?
4. Discuss the concept of accrual accounting and its impact on the financial statements. How does it differ from cash accounting, and why is accrual accounting considered more representative of a company's financial performance?

8.17 Self-check Exercise (Answer Key)

1. Decision-making, 2. Internal Operations, 3. Future-oriented, 4. Detailed and Timely, 5. Internal Managers, 6. B), 7. B)

Lesson No. 9

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STATEMENTS OF ACCOUNTING STANDARDS

STRUCTURE

9.0 OBJECTIVES

After reading this chapter, the student should be able to :

- Understand the role objectives and scope of AS 2.
- Understanding of the terms used in this Statement with the meanings.
- Define various methods or techniques for the measurement of cost of inventories.
- Understand the role objectives and scope of AS 10.
- Understanding the cost of items fixed assets comprise of.
- Understanding the valuation of fixed assets of special types.

9.1. VALUATION OF INVENTORIES (AS 2) REVISED

The revised standard comes into effect in respect of accounting periods commencing on or after 1.4.1999 and is mandatory in nature.

A primary issue in accounting for inventories is the determination of the value at which inventories are carried in the financial statements until the related revenues are recognized. This Statement deals with the determination of such value, including the ascertainment of cost of inventories and any write-down thereof to net realizable value.

Scope

This Statement should be applied in accounting for inventories other than:

(a) work in progress arising under construction contracts, including directly related service contracts;
(b) work in progress arising in the ordinary course of business of service providers;
(c) shares, debentures and other financial instruments held as stock-in-trade; and
(d) producers' inventories of livestock, agricultural and forest products, and mineral oils, ores and gases to the extent that they are measured at net realizable value in accordance with well-established practices in those industries.

The inventories referred to in paragraph 1 (d) are measured at net realizable value at certain stages of production. This occurs, for example, when agricultural crops have been harvested or mineral oils, ores and gases have been extracted and sale is assured under a forward contract or a government guarantee, or when a homogenous market exists and there is a negligible risk of failure to sell. These inventories are excluded from the scope of this Statement.

9.2. DEFINITIONS

The following terms are used in this Statement with the meanings specified :

9.2.1 Inventories

Are assets : (a) held for sale in the ordinary course of business;(b) in the process of production for such sale; or (c) in the form of materials or supplies to be consumed in the production process or in the rendering of services.

9.2.2 Net realizable value

Is the estimated selling price in the ordinary course of business less the estimated costs of completion and the estimated costs necessary to make the sale.

Inventories encompass goods purchased and held for resale, for example, merchandise purchased by a retailer and held for resale, computer software held for resale, or land and other property held for resale. Inventories also encompass finished goods produced, or work in progress being produced, by the enterprise and include materials, maintenance supplies, consumables and loose tools awaiting use in the production process. Inventories do not include machinery spares which can be used only in connection with an item of fixed asset and whose use is expected to be irregular; such machinery spares are accounted for in accordance with Accounting Standard (AS) 10, Accounting for Fixed Assets.

9.2.3. Measurement of Inventories

Inventories should be valued at the lower of cost and net realizable value.

Cost of Inventories: The cost of inventories should comprise all costs of purchase, costs of conversion and other costs incurred in bringing the inventories to their present location and condition.

Costs of Purchase : The costs of purchase consist of the purchase price including duties and taxes (other than those subsequently recoverable by the enterprise from the taxing authorities), freight inwards and other expenditure directly attributable to the acquisition. Trade discounts, rebates, duty drawbacks and other similar items are deducted in determining the costs of purchase.

Costs of Conversion : The costs of conversion of inventories include costs directly related to the units of production, such as direct labour. They also include a systematic

allocation of fixed and variable production overheads that are incurred in converting materials into finished goods. Fixed production overheads are those indirect costs of production that remain relatively constant regardless of the volume of production, such as depreciation and maintenance of factory buildings and the cost of factory management and administration. Variable production overheads are those indirect costs of production that vary directly, or nearly directly, with the volume of production, such as indirect materials and indirect labour.

The allocation of fixed production overheads for the purpose of their inclusion in the costs of conversion is based on the normal capacity of the production facilities. Normal capacity is the production expected to be achieved on an average over a number of periods or seasons under normal circumstances, taking into account the loss of capacity resulting from planned maintenance. The actual level of production may be used if it approximates normal capacity. The amount of fixed production overheads allocated to each unit of production is not increased as a consequence of low production or idle plant. Unallocated overheads are recognized as an expense in the period in which they are incurred. In periods of abnormally high production, the amount of fixed production overheads allocated to each unit of production is decreased so that inventories are not measured above cost. Variable production overheads are assigned to each unit of production on the basis of the actual use of the production facilities. A production process may result in more than one product being produced simultaneously. This is the case, for example, when joint products are produced or when there is a main product and a by-product. When the costs of conversion of each product are not separately identifiable, they are allocated between the products on a rational and consistent basis. The allocation may be based, for example, on the relative sales value of each product either at the stage in the production process when the products become separately identifiable, or at the completion of production. Most by-products as well as scrap or waste materials, by their nature, are immaterial. When this is the case, they are often measured at net realizable value and this value is deducted from the cost of the main product. As a result, the carrying amount of the main product is not materially different from its cost.

Other Costs : Other costs are included in the cost of inventories only to the extent that they are incurred in bringing the inventories to their present location and condition. Interest and other borrowing costs are usually considered as not relating to bringing the inventories to their present location and condition and are, therefore, usually not included in the cost of inventories.

9.2.4. Exclusions from the Cost of Inventories

In determining the cost of inventories, it is appropriate to exclude certain costs and recognize them as expenses in the period in which they are incurred. Examples of such costs are: abnormal amounts of wasted materials, labour, or other production costs; storage costs, administrative overheads, selling and distribution costs.

9.3. COST FORMULAS

The cost of inventories of items that are not ordinarily interchangeable and goods or services produced and segregated for specific projects should be assigned by specific identification of their individual costs.

Specific identification of cost means that specific costs are attributed to identified items of inventory. This is an appropriate treatment for items that are segregated for a specific project, regardless of whether they have been purchased or produced. However, when there

are large numbers of items of inventory which are ordinarily interchangeable, specific identification of costs is inappropriate since, in such circumstances, an enterprise could obtain predetermined effects on the net profit or loss for the period by selecting a particular method of ascertaining the items that remain in inventories.

The cost of inventories should be assigned by using the first-in, first-out (FIFO), or weighted average cost formula. A variety of cost formulas is used to determine the cost of inventories other than those for which specific identification of individual costs is appropriate. The formula used in determining the cost of an item of inventory needs to be selected with a view to providing the fairest possible approximation to the cost incurred in bringing the item to its present location and condition.

Techniques for the Measurement of Cost : Techniques for the measurement of the cost of inventories, such as the standard cost method or the retail method, may be used for convenience if the results approximate the actual cost.

Disclosure : The financial statements should disclose La) the accounting policies adopted in measuring inventories, including the cost formula used; and (b) the total carrying amount of inventories and its classification appropriate to the enterprise. Information about the carrying amounts held in different classifications of inventories and the extent of the changes in these assets is useful to financial statement users. Common classifications of inventories are raw materials and components, work in progress, finished goods, stores and spares, and loose tools.

9.4. ACCOUNTING STANDARD 10 (AS 10): ACCOUNTING FOR FIXED ASSETS

In the initial years, this accounting standard will be recommendatory in character. During this, this standard is recommended for use by companies listed on a recognized stock exchange and other large commercial, industrial and business enterprises in the public and private sectors.

9.4.1. Introduction

Financial statements disclose certain information relating to fixed assets. In many enterprises these assets are grouped into various categories, such as land, buildings, plant and machinery, vehicles, furniture and fittings, goodwill, patents, trademarks and designs. This statement does not deal with the specialized aspects of accounting for fixed assets that arise under a comprehensive system reflecting the effects of changing prices but applies to financial statements prepared on historical cost basis. This statement does not deal with accounting for the following items to which special considerations apply:

(i) forests, plantations and similar regenerative natural resources;
(ii) wasting assets including mineral rights, expenditure on the exploration for and extraction of minerals, oil, natural gas and similar non-regenerative resources;
(iii) expenditure on real estate development; and
(iv) livestock.

Expenditure on individual items of fixed assets used to develop or maintain the activities covered in (i) to (iv) above, but separable from those activities, are to be accounted for in accordance with this Statement.

9.4.2. Definitions

The following terms are used in this Statement with the meanings specified:

Fixed asset is an asset held with the intention of being used for the purpose of producing or providing goods or services and is not held for sale in the normal course of business.

Fair market value is the price that would be agreed to in an open and unrestricted market between knowledgeable and willing parties dealing at arm's length who are fully informed and are not under any compulsion to transact.

Gross book value of a fixed asset is its historical cost or other amount substituted for historical cost in the books of account of financial statements. When this amount is shown net of accumulated depreciation, it is termed as net book value.

Explanation : Fixed assets often comprise a significant portion of the total assets of an enterprise, and therefore are important in the presentation of financial position. Furthermore, the determination of whether expenditure represents an asset or an expense can have a material effect on an enterprise's reported results of operations.

Identification of Fixed Assets : Judgement is required in applying the criteria to specific circumstances or specific types of enterprises. It may be appropriate to aggregate individually insignificant items, and to apply the criteria to the aggregate value. An enterprise may decide to expense an item which could otherwise have been included as fixed asset, because the amount of the expenditure is not material

Stand-by equipment and servicing equipment are normally capitalized. Machinery spares are usually charged to the profit and loss statement as and when consumed. However, if such spares can be used only in connection with an item of fixed asset and their use is expected to be irregular, it may be appropriate to allocate the total cost on a systematic basis over a period not exceeding the useful life of the principal item.

9.4.3 Components of Cost

The cost of an item of fixed asset comprises its(i) purchase price, including import duties and other non-refundable taxes or levies and any directly attributable cost of bringing the asset to its working condition for its intended use; any trade discounts and rebates are deducted in arriving at the purchase price. Examples of directly attributable costs are: site preparation; initial delivery and handling costs; installation cost, professional fees. The cost of a fixed asset may undergo changes subsequent to its acquisition or construction on account of exchange fluctuations, price adjustments, and changes in duties or similar factors.

(ii) Financing costs

(iii) Administration and other general overhead expenses

(iv) Expenditure incurred on start-up and commissioning of the project,

(v) Amortization cost.

Self-constructed Fixed Assets : In arriving at the gross book value of self-constructed fixed assets, Included in the gross book value are costs of construction that relate directly to the specific asset and costs that are attributable to the construction activity in general and can be allocated to the specific asset. Any internal profits are eliminated in arriving at such costs.

Non-monetary Consideration : When a fixed asset is acquired in exchange for another asset, its cost is usually determined by reference to the fair market value of the consideration given. When a fixed asset is acquired in exchange for shares or other securities in the enterprise, it is usually recorded at its fair market value, or the fair market value of the securities issued, whichever is more clearly evident.

Improvements and Repairs : The cost of an addition or extension to an existing asset which is of a capital nature and which becomes an integral part of the existing asset is usually added to its gross book value. Any addition or extension, which has a separate identity and is capable of being used after the existing asset is disposed of, is accounted for separately.

Retirements and Disposals : Items of fixed assets that have been retired from active use and are held for disposal are stated at the lower of their net book value and net realizable value and are shown separately in the financial statements. Any expected loss is recognized immediately in the profit and loss statement. In historical cost financial statements, gains or losses arising on disposal are generally recognized in the profit and loss statement. On disposal of a previously revalued item of fixed asset, the difference between net disposal proceeds and the net book value is normally charged or credited to the profit and loss statement except that, to the extent such a loss is related to an increase which was previously recorded as a credit to revaluation reserve and which has not been subsequently reversed or utilized, it is charged directly to that account. The amount standing in revaluation reserve following the retirement or disposal of an asset which relates to that asset may be transferred to general reserve

9.4.4. Valuation of Fixed Assets in Special Cases

In the case of fixed assets acquired on hire purchase terms, although legal ownership does not vest in the enterprise, such assets are recorded at their cash value, which if not readily available, is calculated by assuming an appropriate rate of interest. They are shown in the balance sheet with an appropriate narration to indicate that the enterprise does not have full ownership thereof.

Where an enterprise owns fixed assets jointly with others (otherwise than as a partner in a firm), the extent of its share in such assets, and the proportion in the original cost, accumulated depreciation and written down value are stated in the balance sheet. Alternatively, the pro rata cost of such jointly owned assets is grouped together with similar fully owned assets. Details of such jointly owned assets are indicated separately in the fixed assets register

Where several assets are purchased for a consolidated price, the consideration is apportioned to the various assets on a fair basis as determined by competent value.

9.4.5. Fixed Assets of 8pecial Types

Goodwill, in general, is recorded in the books only when some consideration in money or money's worth has been paid for it. Whenever a business is acquired for a price (payable either in cash or in shares or otherwise) which is in excess of the value of the net assets of the business taken over, the excess is termed as 'goodwill'. As a matter of financial prudence, goodwill is written off over a period. However, many enterprises do not write off goodwill and retain it as an asset.

Patents are normally acquired in two ways :

(i) by purchase, in which case patents are valued at the purchase cost including incidental expenses, stamp duty, etc. and

(ii) by development within the enterprise, in which case identifiable costs incurred in developing the patents are capitalized. Patents are normally written off over their legal term of validity or over their working life, whichever is shorter

Know-how in general is recorded in the books only when some consideration in money or money's worth has been paid for it. Know-how is generally of two types :

(i) relating to manufacturing processes; and

(ii) relating to plans, designs and drawings of buildings or plant and machinery

Where the consideration for the supply of know-how is a series of recurring annual

payments as royalties, technical assistance fees, contribution to research, etc., such payments are charged to the profit and loss statement each year.

Self-Check Exercise (True/False)

1. Accounting standards are uniform across the globe.
2. Accounting standards are designed to provide flexibility to companies in presenting their financial information.
3. Compliance with accounting standards is optional for companies.
4. Changes in accounting standards do not impact the comparability of financial statements over time.

9.5 DISCLOSURE

Disclosures that are sometimes made in financial statements include :

(i) Gross and net book values of fixed assets at the beginning and end of an accounting period showing additions, disposals, acquisitions and other movements;

(ii) Expenditure incurred on account of fixed assets in the course of construction or acquisition; and

(iii) Revalued amounts substituted for historical costs of fixed assets, the method adopted to compute the revalued amounts, the nature of any indices used, the year of any appraisal made, and whether an external valuer was involved, in case where fixed assets are stated at revalued amounts.

The cost of a fixed asset should comprise its purchase price and any attributable cost of bringing the asset to its working condition for its intended use. Financing costs relating to deferred credits or to borrowed funds attributable to construction or acquisition of fixed assets for the period up to the completion of construction or acquisition of fixed assets should also be included in the gross book value of the asset to which they relate. However, the financing costs (including interest) on fixed assets purchased on a deferred credit basis or on monies borrowed for construction or acquisition of fixed assets should not be capitalized to the extent that such costs relate to periods after such assets are ready to be put to use.

The cost of a self-constructed fixed asset should comprise those costs that relate directly to the specific asset and those that are attributable to the construction activity in general and can be allocated to the specific asset

When a fixed asset is acquired in exchange or in part exchange for another asset, the cost of the asset acquired should be recorded either at fair market value or at the net book value of the asset given up, adjusted for any balancing payment or receipt of cash or other consideration. For these purposes fair market value may be determined by reference either to the asset given up or to the asset acquired, whichever is more clearly evident. Fixed asset acquired in exchange for shares or other securities in the enterprise should be recorded at its fair market value, or the fair market value of the securities issued, whichever is more clearly evident.

Subsequent expenditures related to an item of fixed asset should be added to its book value only if they increase the future benefits from the existing asset beyond its previously assessed standard of performance. Material items retired from active use and held for disposal should be stated at the lower of their net book value and net realizable value and shown separately in the financial statements.

Losses arising from the retirement or gains or losses arising from disposal of fixed asset which is carried at cost should be recognized in the profit and loss statement

When a fixed asset is revalued in financial statements, an entire class of assets should be revalued, or the selection of assets for revaluation should be made on a systematic basis. This basis should be disclosed. The revaluation in financial statements of a class of assets should not result in the net book value of that class being greater than the recoverable amount of assets of that class. When a fixed asset is revalued upwards, any accumulated depreciation existing at the date of the revaluation should not be credited to the profit and loss statement.

Ail increase in net book value arising on revaluation of fixed assets should oe credited directly to owners' interests under the head of revaluation reserve, except that, to the extent that such increase is related to and not greater than a decrease arising on revaluation previously recorded as a charge to the profit and loss statement, it may be credited to the profit and loss statement. A decrease in net book value arising on revaluation of fixed asset should be charged directly to the profit and loss statement except that to the extent that such a decrease is related to an increase which was previously recorded as a credit to revaluation reserve and which has not been subsequently reversed or utilised, it may be charged directly to that account.

On disposal of a previously revalued item of fixed asset, the difference between net disposal proceeds and the net book value should be charged or credited to the profit and loss statement except that to the extent that such a loss is related to an increase which was previously recorded as a credit to revaluation reserve and which has not been subsequently reversed or utilised, it may be charged directly to that account.

Fixed assets acquired on hire purchase terms should be recorded at their cash value, which, if not readily available, should be calculated by assuming an appropriate rate of interest. They should be shown in the balance sheet with an appropriate narration to indicate that the enterprise does not have full ownership thereof.

In the case of fixed assets owned by the enterprise jointly with others, the extent of the enterprise's share in such assets, and the proportion of the original cost, accumulated depreciation and written down value should be stated in the balance sheet. Alternatively, the pro rata cost of such jointly owned assets may be grouped together with similar fully owned assets with an appropriate disclosure thereof.

Where several fixed assets are purchased for a consolidated price, the consideration should be apportioned to the various assets on a fair basis as determined by competent valuer.

Goodwill should be recorded in the books only when some consideration in money or money's worth has been paid for it. Whenever a business is acquired for a price (payable in cash or in shares or otherwise) which is in excess of the value of the net assets of the business taken over, the excess should be termed as 'goodwill'

The direct costs incurred in developing the patents should be capitalized and written off over their legal term of validity or over their working life, whichever is shorter.

Amount paid for know-how for the plans, layout and designs of buildings and/or design of the machinery should be capitalized under the relevant asset heads, such as buildings, plants and machinery, etc. Depreciation should be calculated on the total cost of those assets, including the cost of the know-how capitalized. Where the amount paid for know-how is a composite sum in respect of the manufacturing process as well as plans, drawings and designs for buildings, plant and machinery, etc., the management should apportion such consideration into two parts on a reasonable basis.

9.6. SUMMARY

Information about the amount held in different classification of inventories and the extent of the changes in these assets is useful to financial statements users.

Common classification of inventories is raw materials and components, work in progress, finished goods, stores and spares and loose tools. In case of AS 10 fixed assets of an enterprise and therefore are important in the presentation of financial position. Furthermost the determination of whether expenditure represents an assets or an expense can have a material effect on an enterprises reported results of operation.

Keywords

Accounting Standards:- Guidelines and rules set by accounting authorities to standardize financial reporting, ensuring consistency, comparability, and transparency in financial statements.

International Financial Reporting Standards (IFRS):-A global set of accounting standards developed by the International Accounting Standards Board (IASB) to create a common language for financial reporting worldwide.

Generally Accepted Accounting Principles (GAAP):-A set of accounting standards, principles, and procedures widely used in the United States to guide financial reporting and ensure uniformity.

9.7 Self-Check Exercise

Short answer type questions

1. What is the purpose of accounting standards?
2. How do accounting standards contribute to international business?

Long answer type questions

3. Discuss the rules regarding measurement of inventories as per AS 2.
4. Write a detailed note as per AS 10.

9.8 Self-Check Exercise (Answer Key)

1.False, 2.False 3.False, 4.False

MBA-Distance Education (First Year)
Semester-I

AFM 105
ACCOUNTING FOR MANAGEMENT

Lesson No. 10

AUTHOR : Ms. HARPREET KAUR

RATIO ANALYSIS

STRUCTURE

10.1 Introduction

The accounting data extracted from the financial statements can be analyzed and interpreted to become meaningful information, relevant for the purpose of the decision making. Financial analysis is primarily the means through which various items from profit and loss account and balance sheet can be related to each other and the financial strengths and weakness can be identified.

Ratio analysis.
Funds flow analysis.
Cash flow analysis.
Schedules of changes in working capital. Trend
analysis.
Common size statement, etc.

10.2 RATIO ANALYSIS - MEANING AND NATURE

Ratio analysis is one of the powerful techniques of making financial statement analysis. A ratio can be defined as a numerical/ quantitative or arithmetic relationship between two variables. It is simply the value of one variable in terms of the other, which can be easily computed by dividing one quantity with another. If, for example, a firm earns a net profit of Rs.20,000 in a year by making a total sales of Rs.2,00,000 then both the variables, i.e. net profit and sales, would be quantitatively related in that the firm's net profit are 10% of total sales or that the ratio between them would be 1 : 10. It would also imply that the firm earns one-tenths of profits with respect to sales. Thus, ratio can be expressed either as a percentage, a fraction or as a simple comparison between numbers. However, calculating an absolute ratio does not serve much analytical purpose. Unless, certain rules of thumb can be established, the analytical insight into a particular accounting phenomenon would be seriously impeded. In order to be able to draw any meaningful conclusion, it would be a much better choice to interpret a ratio in relation to other ratios, e.g. a group of related ratios could be computed to generate a clear picture about an aspect. Also, the financial standing of a firm can be evaluated very easily by comparing the present ratios with those of the past. Comparisons over a period of time would indicate whether the financial efficiency of a firmhas improved or deteriorated.

The only thing about which an analyst has to be worry is the change in any accounting policies. Comparisons could also be made from firm to reveal the financial position of a particular firm vis-a-vis. Similar firms in the industry. But again, one would have to be cautious about any difference in the accounting procedures of different firms. Apart from this, the future performance of a firm can also be estimated with the help of ratios. These projected ratios would later serve as an instrument for control by comparing projected and actual ratios.

Ratio analysis, thus, lends a feature of comparability to the related bits of information.

10.3 TYPES OF RATIOS

There are certain ratios which derive their data from the balance sheet while some of them are computed from the items of profit and loss account. The former are called the balance sheet ratios and the later are known as income statement ratios. There can be another category, of ratios called the composite ratios. These ratios depict a relationship between, a profit and loss account item and a balance sheet item.

The usage and computation of a ratio depends on the purpose for which it is required. People are interested to know about different financial aspects of a business. As such, they require different types of information and analysis, e.g. whereas a creditor would be interested in knowing the liquidity position of the business, a shareholder would like to be aware of the profitability or the dividend pay-out of the business. Thus, on a functional basis, ratios can be categorized into the following parts :

(i) Liquidity Ratios
(ii) Leverage Ratios
(iii) Profitability Ratios
(iv) Activity Ratios

Liquidity ratios intend to determine the short-term solvency of a firm. The seek to find out capability of a firm to meet its short-term or current liabilities.

Leverage ratio, also known as the long-term solvency ratios, are computed to comment on the ability of a firm to meet its long-term payment requirements and to cover the interest on such obligations.

The overall effectiveness of a firm is measured with the help of profitability ratios. This can be done either in relation to sales or in relation to investments.

Activity ratios are those which convey the efficiency with which a firm has made use of its resources. They indicate the speed at which assets are converted into sales. Therefore, they are also known as the turnover ratios.

10.3.1 LIQUIDITY RATIOS

Liquidity ratios indicate the short terms solvency of a business. To measure the liquidity of a firm, following ratios can be computer.

(a) Current Ratio

Current ratio is the ratio between the current assets and current liabilities of a firm. Also known by the name of working capital ratio, it is calculated by dividing the total current assets by the total current liabilities of the firm. Thus :

$$\text{Current ratio} = \frac{\text{Current Assets}}{\text{Current liabilities}}$$

Current assets include all those assets which can be converted into cash within short

period of time like, marketable securities, debtors, inventory, cash, bank balance, bill receivable, prepaid expenses, work-in progress etc.

Current liabilities are those which have to paid within a short period, mostly one year, like bills payable, sundry creditors, income tax payable, outstanding expenses, short term loans, bank overdraft, etc.

Thus, if a firm has current assets worth Rs.2,00,000 and current liabilities worth Rs.50,000, then :

$$\text{Current ratio} - \frac{2,00,000}{50,000} = 4:1$$

This implies that the firm has four times more current assets than its current liabilities. A high current ratio means a layer amount available per rupee of current liability and thus, the ability of the firm to meet its current obligations is more. The conventional rule of thumb in this regard is a 2 : 1 ratio.

However, an unusually high current ratio may imply that the current asset management of the firm is not satisfactory. It may be an indication of too much funds being tied up in slow moving inventories or highly doubtful debts. Also it may be indicative of an unutilized borrowing capacity of the firm. Thus, it does not necessarily mean that a healthy solvency position. This happens where the current ratio fails as the ultimate measure of liquidity i.e., it indicates only the 'quantity' or current assets but not the * quality*. To overcome this limitation, another ratio is computed, called the Acid Test Ratio or the Quick Ratio.

(b) Acid Test or Quick Ratio

Quick ratio is a relatively more rigorous test of a firm's liquidity than the current ratio. This is so because only those assets are considered for payment of current liabilities which can be transformed into cash at a very short notice and also without any loss of value. Therefore, inventories and prepaid expenses are excluded while examining the firm's ability to pay its short-term obligation. As such:

The value of the current liabilities remains the same as they have to be paid irrespective of the financial circumstances of the firm.

Thus, quick ratio can be computed by dividing quick assets with current liabilities.

$$\text{Quick/ Acid test ratio} - \frac{\text{Quick Assets}}{\text{Current liabilities}}$$

As was the case with the current ratio, a higher quick ratio would be an indicator of better liquidity position of the firm The conventional 'rule of thumb' in this regard is a ratio of 1 : 1. However, some amount of caution is required while interpreting this ratio, because quick assets include debtors also. If debtors are slow paying and doubtful, the quick ratio may depict a favorable position of liquidity, which may not be the case. As such, we calculate another ratio called the absolute ratio which is the most harsh test of a firm's short term solvency.

(c) Absolute Liquidity Ratio

While Computing this ratio, there is very little room left for those current assets which may have a slightest doubt of being converted into cash. Absolute liquid assets, thus include only cash, bank balance, marketable securities and temporary investment.

Thus,

$$\text{Absolute liquidity ratio} * \frac{\text{Absolute liquid assets}}{\text{Current liabilities}}$$

A ratio of 0.5 : 1 is the generally accepted standard for the absolute liquidity ratio and most management prefer to compute this ratio along with other ratios, in order to have a fair idea of the firm's short term solvency.

Self-Check Exercise

1. What does the current ratio measure?
2. What does the Acid-Test Ratio assess?

10.3.2 LEVERAGE RATIOS

Leverage ratios indicate the ability of a firm to discharge its long obligations. Long term creditors are interested in the repayment of their principal amount as well as the timely payment of interest. As such, leverage ratios can be subdivided into two categories, (i) which exhibit a relationship between the owner's funds and borrowed funds, and (ii) which show the ability of a firm to meet the fixed interest changes. The. second category of leverage ratios is known as the coverage ratios.

The following ratios are generally computed to measure the long term solvency of a firm :

(a) Debt-equity ratio ascertains the relationship between the claims of outsiders and shareholders on the assets of the firm. Simply stated, the ratio express the relationship between owner's funds and borrowed funds.

$$\text{Debt-equity ratio} = \frac{\text{Total Debt}}{\text{Shareholders' Equity}}$$

Total debt, includes the outsider's funds in the form of debentures, bonds, bill etc. In other words, total debt compasses both long term as well as short term liabilities. A slightly ticklish issue here is that of preference share capital whether to consider as a debt or as equity? The answer liaison the purpose for which the ratio is being computed. If the objected is to judge the financial solvency for the outsiders, preference capital would be included as equity. If, however, the objective is to judge the earnings availability for common shareholders preference capital would be treated as debt.

The owner's equity would consist of equity share capital but would exclude any accumulated losses of the past and deferred expenditures.

The interpretation of this ratio depends a lot on the financial policy and the nature of business of a firm. As such, it is difficult to advocate a rule of thumb for this ratio. As the debt-equity ratio rises, the safety margin for the creditors diminishes. It would not only induce a high pressure and interference on the firm, by the creditors but also restrict the borrowing capacity of the firm. Also, the interest burden would mount up on the firm. On the other hand, a very low debt-equity ratio would deprive the management of the benefits of "trading on equity*, thus, both a very high or very low ratio would not be advisable. In a developing country like India, it is a general convention to follow a ratio of 2 : 1 or sometimes ever 3 : 1 . However, a mechanical application of this ratio is not advisable. The nature of the business, the risk factors and the financial policies of the firm are some factors which have to be taken care of while deciding on the appropriate debt-equity ratio.

(b) Equity Ratio

Equity ratio measure the relation between total assets and shareholders funds of a business, as a an indicator of long term solvency. It is also known proprietary ratio. Thus,

$$\text{Equity Ratio} = \frac{\text{Shareholder's Funds}}{\text{Total Assets}}$$

A higher equity ratio indicates a better solvency position of the business in the long run.

(c) Fixed assets to net worth ratio

Another supplementary variant of the leverage ratios is the fixed assets to net worth ratio. It can be expressed as follows :

$$\text{Fixed assets to net worth ratio} = \frac{\text{Fixed Assets (after Dep)}}{\text{Shareholder's Fund}}$$

The ratio is indicative of the extent to which the net worth is being utilized for financing fixed assets. There can be no rule of thumb in this regard but a ratio of around 60- 65 percent is generally considered normal.

(d) Solvency Ratio

This is a simple relation between total assets and total liabilities for the outsiders of a firm. It can be computed by simply deducting the equity ratio from 100 Mathematically, it can be expresses as :

$$\text{Solvency Ratio} - \frac{\text{Total Liabilities to Outsiders}}{\text{Total Assets}}$$

Obviously, a lower ratio would be considered a better one as for a stable long term solvency is concerned. Another name for this ratio is debt to total capital ratio.

(e) Interest Coverage Ratio

Coverage ratios seek to measure the amount left over form operations for the settlement of the claims of the outsiders. The interest coverage ratio is computed by dividing the earning before interest and taxes by the interest liability. Thus,

$$\text{Interest Coverage Ratio} = \frac{\text{Net Profit (EBIT)}}{\text{Fixed Interest Charges}}$$

The larger the ratio, the better it is for the creditors of the business as it would mean that the firm is well equipped to handle the fixed charge obligations. However, a very high interest coverage ratio would mean unutilized debt capacity.

(f) Dividend Coverage Ratio

The dividend coverage ratio examines the ability of the business to pay dividends on preference share. Thus, the ratio would expressed as :

$$\text{Dividend Coverage Ratio} \frac{\text{Earnings After Taxes}}{\text{Preference Dividend}}$$

A higher coverage would be better from the stand point of preference shareholders.

(g) Total Coverage Ratio

Also known by the name of fixed charge coverage, this ratio considers all the fixed obligations of a firm. Thus,

$$\text{Total Coverage Ratio} = \frac{\text{EBIT}}{\text{Total Fixed Charges}}$$

A higher ratio would indicate a more capable firm as far as servicing its fixed charges if the form of interest on loans and preference dividend are concerned.

10.3.3 PROFITABILITY RATIO

Unlike the solvency ratios, which are oriented to the needs of the creditors of the business, profitability ratios cater to the information needs of the management. The management is interested in knowing the operational efficiency of the business and profitability serves as a yardstick for measuring it. Profitability ratios provide information about some vital questions such as the adequacy of the profits earned, rate of return, earning per share, dividend payments etc.

Profitability ratios can be computed either on the basis of sales or on the basis of investments profitability ratio related to sales.

(a) Gross Profit Ratio

Gross profit ratio is also known as gross margin. It expresses the relationship between gross profit, which is the difference between sales and costs of goods sold, and sales. Thus,

$$\text{Gross Profit Ratio} \quad \frac{\text{Gross Profit}}{\text{Net Sales}} * 100$$

Generally, this ratio is expressed as a percentage. A higher means a better operating result. It may be due to a lower cost of production or a higher sales price. Another possibility of higher gross profit ratio is a fall in cost of goods sold. There can be no standard gross profit ratio as it may very from business to business. The gross profit ratio would be considered satisfactory if it is able to cover the operating, selling and distribution expenses. However, a very high gross profit ratio needs a more cautious appraisal because it may be just due to either over-valuation of closing stock for undervaluation of opening stock.

(b) Net Profit Ratio

This ratio seeks to formulate a relationship between net profit and sales of the business. Thus

$$\text{Net Profit Ratio} = \frac{\text{Net Profit after taxes and interest}}{\text{Net Sales}} * 100$$

Net profit ratio is a better indicator of the operation efficiency of the firm as compared to the gross profit ratio. Both gross ratio and net profit ratio needs to be examined side by side to evaluate, the profitability of the firm obviously a higher net profit ratio will indicate a better operations efficiency. However, it is possible to have a low net profit ratio and still be able to earn a high rate of return on investments due to a high inventory turnover.

(c) Expenses Ratio

Just as profits could be related to sales, it is also possible to relate expenses to sales. Keeping in mind the different concepts of expenses, the expenses ratio can be computed in 3 possible manners:

(i) Operating Ratio

It is the ratio between operating costs and net sales.

$$\text{Operating Ratio} - \frac{\text{Operating Cost}}{\text{Net Sales}} \times 100$$

$$\text{Operating Ratio} = \frac{\text{Cost of Goods Sold + Operating Expenses}}{\text{Net Sales}} * 100$$

Operating expenses comprises of administrative, selling and distribution expenses.

(U) Cost of Goods Sold Ratio J

The relationship between cost of goods sold and sales can be simply established by deducing the gross profit ratio from 100. Mathematically.

Thus

$$\text{Cost of Goods Sold Ratio} = \frac{\text{Cost of Goods Sold}}{\text{Sales}} \times 100$$

(ill) Specific Expense Ratio

This ratio is computed to find out as to how particular operating expenses is related to sales. Thus .. -

$$\text{Specific Expenses Ratio} = \frac{\text{Specific Expenditure}}{\text{Net sales}} \times 100$$

From the foregoing discussion it is clear that expenses ratio are the opposite of the profit ratio. As such, a lower expenses ratio would be better for a company and vice-versa.

Self-Check Exercise

3. What does ROA measure?
4. What does Net Profit Margin indicate?
5. What does Return on Equity (ROE) measure?

10.3.4 PROFITABILITY RATI08 RELATED TO INVESTMENTS

The profitability ratios related to investments are commonly known as the ratios of return on the investment (ROI). The ROI can be computed in relation to assets, capital employed and shareholder's equity. Accordingly, we can have 3 different ratios for ROI. They are :

Return on assets (ROA)

Also known by the name of profits to assets ratio, this ratio studies the relationshipbetween assets and profits. Depending upon the purpose of calculation, the figures for net profit could be considered after taxes, after taxes and interest or after taxes and interests minus tax savings. Similarly, assets could also be considered as total assets, fixed asset only

or tangible assets only. Thus,

$$\text{Return on Assets} = \frac{\text{Net Profit After Taxes}}{\text{Total Assets}}$$

or

$$\text{ROA} = \frac{\text{Net Profit After Taxes + Interest}}{\text{Total Assets}}$$

or

$$\text{ROA} = \frac{\text{Net Profit After Taxes + Interest- Tax Savings}}{\text{Total Assets}}$$

or

$$\text{ROA} = \frac{\text{Net Profit After Taxes + Interest}}{\text{Tangible Assets}}$$

or

$$\text{ROA} = \text{Net Profit After Taxes + Interest / Fixed Assets}$$

Though an important measure of profitability, it cannot distinguish between the profitability of different sources of funds which finance total assets.

(a) Return on Capital Employed (ROCE)

Under ROCE the total capital employed is related with the profits of the business. It is one of the most popular ratios used for measuring the overall profitability of the firm.

The firm capital employed can be perceived in different ways, viz :

(1) Gross capital employed which comprises of total assets.

(2) Net capital employed which is the difference between total assets and current liabilities.

(3) Shareholder's funds.

ROCE can be calculated in a variety of ways. The common methods used for computing this ratio are as follows :

(a) ROCE - Net Profit After Taxes / Total Capital Employed

OR

(b) ROCE - Net Profit After Taxes Interest / Total Capital Employed

OR

(c) ROCE - Net Profit After Taxes Interest / Total Capital Employed-Intangible Assets

A higher ratio indicates a more efficient use of the capital employed and vice-versa. It can be used to make inter firm comparison or comparison of the efficiency of the same firm over a period of time. It is also possible to compare the ROCE of one firm with the ROCE of the total industry.

(c) Return on Equity

This ratio examines the profitability of a firm from the point of view of the owners of the business.

Return on Equity - Net Profit After Taxes - Preference Dividend / Paid up Equity Shares Capital

As with the other rations, it is also possible to make inter firm comparisons, comparison with past records of the same firm and comparisons with overall industry average.

Apart from these there are certain other measures which can be used to evaluate the profitability of the business. Some such ratios and their formulate are enlisted below:

1. Earning Per Share = Net Profit After Taxes-Preference Dividend/ No. of outstanding Equity Shares
2. Dividend Per Share = Amount Paid as Dividend/ Amount paid as Dividend
3. Dividend payout Ratio = Dividend per Share/ Earning per Share
4. Dividend Yield Ratio = Dividend Per Share/ Market Value Per Share
5. Earning Yield = Earning Per Share/ Market Value Per Share
6. Price Earning Ratio = Market Price of Share/Earnings Per Share

10.3.5 ACTIVITY RATIOS

Activity ratio is also known as efficiency ratio or current assets movement ratio. These ratios help in knowing as to how efficiently the assets of a business are being managed. They are also known as turnover ratios because they reveal the speed with which asset is converted into sales. According to the information needed activity ratios can be calculated for inventory, debtors, creditors, capital etc.

(a) Inventory Turnover Ratio

The inventory turnover ratio shows the number of time inventory is turned into sales. The inventory level can be related with either sales or cost of goods sold.

Thus,

Inventory Turnover = Sales / Closing Inventory

Or

Inventory Turnover = Cost of Goods Sold/ Average Inventory

A high inventory turnover ratio would generally indicate an efficient inventory management. However their may be certain circumstances in which a high inventory turnover ratio may be interpreted with caution. The ratio could rise in case the level of inventory carried is very low which may lead to a situation of stock-out.

(2) Debtor's Turnover Ratio

Debtors arise because a firm sells goods on credit for the purpose of sales promotion. The debtors turnover ratio indicate the velocity of debt collection of a firm. It shows the number of times debtors are converted into cash during a year.

Thus,

Debtor Turnover = Net Credit Sales/ Average Trade Debtors

Or

Debtor Turnover = Total Sales / Debtors

Generally, a high ratio would mean an efficient debt management. But a very high ratio may reflect the inability of the company to sell on credit which may cause a loss of sales and profits.

Another variant of debtor's turnover ratio is the average collection period which can be calculated as follows:

$$\text{Average Collected Period} = \frac{\text{No. of Working Days}}{\text{Debtor s Turnover}}$$

(b) Creditors Turnover Ratio

Creditor turnover ratio is computed to find out the time which the firm will probably take to repay its trade creditors who arise because of credit purchases.

Creditors Turnover Ratio = Net Credit annual Purchase/Average Trade Creditors

Like the debtors turnover ratio, we can compute the variant of the creditors turnover ratio in the form of average payment period.

Average Payment Period - Trade Creditors * Number of Working Days/
Net Annual Purchase

A low creditors turnover ratio implies that the suppliers are liberal in granting credit to the business where as a high ratio would mean that the accounts are to settled rapidly.

Self-Check Exercise

6. What does Total Asset Turnover assess?
7. What does Fixed Asset Turnover measure?

10.4 Significance of Ratio Analysis

1. It acts as a device to analyze the financial health of a company.
2. It allows inter-firm comparisons and comparisons over time.
3. It provides useful information for the interested groups of the business.
4. It is easier to take decisions on the basis of information provided by ratio analysis.
5. It helps in making trend analysis.
6. It serves as a ready guide for financial forecasting and planning.
7. It plays a vital role in making communication effective and thus allows for greater coordination and control.

10.5 LIMITATIONS OF RATIO ANALYSIS

1. It does not consider changes in price level.
2. There are no well accepted standards for interpretation of ratio analysis.
3. Being based on historical costs they may not be indicative to the future.
4. Any changes in accounting procedures would make the results of ratio analysis misleading.
5. Due to the complex nature of the business and their diversified comparisons of ratios between firms becomes difficult.
6. Since a single ratio is not of much use in drawing any meaningful conclusion it requires the calculation of a number of ratios which may lead to confusion.

10.6 Illustration: You have been supplied the following data for the Royal Plastic Company Ltd. and its industry averages:

(i) Determine the indicated ratios for the Royal Plastic Company.

Balance sheet as on December 31, 1999

Liabilities	Amount (Rs.)	Assets	Amount (Rs.)
Equity share capital	1,00,000	Plant and Equipment	1,12,000
10% preference share capital	40,000	Cash	12,300
Retained earnings	27,400	Stock	60,800
Long term debt	34,000	Debtors	36,000
Sundry creditors outstanding	31,500	Other Fixed Assets	39,000
Expenses	1,200	Other current liabilities	26,000
	2,60,100		2,60,100

Statement of profit for the year-ending December 31,1999

Sales net		2,25,000
Less: Cost of goods sold	1,52,000	
Selling expenses	29,500	
Administrative expenses	14,800	
Research and Development	6,500	
Interest	2,900	2,06,200
Earnings before taxes		18,800
Less: Income taxes		-9,400
Net Income		9,400
Dividends paid to equity holders		5,000

Financial ratios of industry :

1.	Current ratio	2.2 to 1 2. 8
2.	Stock turnover •	times 56 days
3.	Collection period	45%
4.	Total debt/shareholder's equity	10 times
5.	Fixed charge coverage before tax	1.35 times
6.	Turnover of assets	11.9%
7.	Income before tax/sales	10.9%
8.	Rate of return of shareholder's equity	

Solution:

(1) $\text{Current ratio} = \frac{\text{Rs.1,09.100}}{\text{Rs.58,700}} = 1.85$

(2) $\text{Stock turnover} = \frac{\text{Rs.1,52,000}}{\text{Rs.60,800}} \times 360 = 251\text{days}$

(3) $\text{Collection period} = \frac{\text{Rs.36,000}}{\text{Rs.2,25,000}} = 58 \text{ days}$

(4) $\text{Total debt/shareholder's equity} = \frac{\text{Rs. 92,700}}{\text{Rs.1,67,400}} \times 100 = 55.3\%$

(5) Fixed charge coverage before tax = EBIT / Interest + Dividend on Preference Share

$$\frac{\text{Rs.21,700}}{\text{Rs.6,900}} = 3.14 \text{ times}$$

(6) Turnover of assets = 152,000/ 260,000 = 0.58 %

(7) $\text{Income before tax/sales} = \frac{18,800}{\text{Rs.2,25,100}} \times 100 = 8.36\%$

(8) Rate of Return of Shareholders Equity= 9400/127400 x100 = 5.45%

	Financial Ratios	Industry) 1	Company) 1
1.	Current ratio	2.2	1.86
2.	Stock turnover	2.8 times	2.51 times
3.	Collection period	56 days	58 days
4.	Total debt shareholder's equity	45%	55%
5.	Fixed charges coverage before tax	10 times	3.14 times
6.	Turnover of assets	1.35 times	0.58 times
7.	Income before tax/sales	11. 9%	8.36%
8.	Rate of return on shareholder's equity	10.9%	5.45%

The company's position both in terms of profitability and solvency is weaker than of the industry. It is supported by lower profitability ratios (items 7 and 8) higher debt-equity ratio, and lower fixed charge coverage before tax, these are indicative of its weakness from the point of view or its solvency. Likewise, its liquidity position does not seem to be very satisfactory. The acid test ratio is likely to be far below I.

Illustration : The following information is available from the books of a firm for the current year : '

Profit before tax	Rs. 15,60,000
Tax rate 40%	
Proposed Dividend	20%
15% preference share capital	Rs. 10,00,000
Equity share capital	Rs.20,00,000
(Shares of Rs. 10 each)	

If the market price of firm's ordinary shares stands at Rs.60, calculate:

(a) Earning per share
(b) Dividend per share
(c) Earning yield ratio
(d) Dividend yield ratio
(e) Price earnings ratio

Solution:

	Rs.
Profit before tax	15.60.0 ,
Less tax @ 40%	24,000
Profit after tax	9.36.000
Less preference dividend @ 15%	1.50.000
	7.86.000

(a) Earning Per Share = Profit available to Equity Share Holders / No. of Equity Share Outstanding

$$= \frac{7,86,000}{2,00,000}$$

(b) Dividend Per Share $\frac{\text{Dividend Rate}}{\text{Face Value of Share}} \times 100$

$= 20/100 = 2$

(c) Dividend Yield Ratio $\frac{DPS}{\text{Market Value of Share}}$ x100

= 2/6x100 = 3.33%

(d) PriceEarnings Ratio $\frac{\text{Market Price of Share}}{EPS}$

= 60/3.93= 15.26 Times

Keywords

Ratio Analysis:- The evaluation of financial performance and position through the calculation and interpretation of various financial ratios.

Liquidity Ratios:- Ratios that assess a company's ability to meet short-term obligations by measuring its liquidity and working capital.

Profitability Ratios:-Ratios that evaluate a company's ability to generate profits in relation to its sales, assets, equity, or other financial metrics.

Efficiency Ratios:-Ratios that assess how well a company utilizes its resources, such as inventory turnover or accounts receivable turnover.

10.7 Self-Check Exercise

Short answer type questions

1. Why are liquidity ratios important in ratio analysis?
2. How does the current ratio differ from the quick ratio?

Long answer type questions

3. Compare and contrast profitability and efficiency ratios. How do these ratios provide insights into different aspects of a company's financial performance? Provide examples to support your explanation.
4. Discuss the limitations of ratio analysis. What factors should analysts consider when interpreting ratio results, and how can these limitations be mitigated for a more accurate assessment of a company's financial health?

10.8Self-Check Exercise (Answer Key)

1. Liquidity, 2. Solvency, 3. Efficiency, 4. Profitability, 5. Equity, 6. Utilization, 7. Productivity

Lesson No. 11

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CASH FLOW STATEMENT

STRUCTURE

11.1 Introduction

In this chapter we will take cash aspect of the analysis in the form of Cash Flow Statement which is useful for short term planning. A firm needs sufficient cash to pay debts maturing in near future, to pay interest and other expenses and to pay dividends to shareholders. The projections of cash inflows and outflows for the near future can be made determination the availability of cash.

11.2 MEANING OF CASH FLOW STATEMENT

A statement of changes in the financial position of a firm on cash basis is called a Cash Flow Statement. Such a statement enumerates net effects of the various business transactions on cash and takes into account receipts and disbursements of cash. A Cash Flow Statement summarizes causes of changes in cash position of a business enterprise between dates of two balance sheets. It is called a Cash Flow Statement because it describes the inflow or sources and outflow or uses of cash. It provides useful information about an enterprise's activities in generating cash from operations to repay debt, distribute dividends or reinvest to maintain or expand its operating capacity about its financing activities, both debt and equity and about its investment in fixed assets or current assets other than cash. All the items whether current or non-current which increase or decrease the balance of cash are included in the Cash Flow Statement. Therefore, the effect of changes in the current assets and current liabilities during an accounting period on cash position, which is not shown in a Fund Flow Statement, is depicted in a Cash Flow Statement. The depiction of all possible resources and applications of cash in the Cash Flow Statement helps the financial manager in short term financial planning in a significant manner because the short term business obligations such as trade creditors, bank loans, interest on debentures and dividend to shareholders can be met out of cash only. The preparation of Cash Flow Statement is also consistent with the basic objective of financial reporting which is to provide information to investors, creditors and others which would be useful in making rational decisions. The basic Objective is to enable the users of information to make prediction about cash flow in an organization. So, ultimate success of failure of a business depends upon the cash generated.

11.3 CASH AND CASH EQUIVALENTS

Paragraph 5 of A S-3 defines cash flows as "inflows and outflows of cash and cash

equivalents." Cash comprises of cash in hand and demand deposits with banks and cash equivalents or 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. Therefore, an investment normally qualifies as a cash equivalent only when it has a short maturity of, say, three months or less from the date of acquisition. Investment in shares is excluded from cash equivalents unless they are in substance, readily realizable without loss in value. For example, preference shares of a company acquired shortly before their specified redemption date. Thus, two important conditions need to be satisfied for any investment to qualify as cash equivalents.

(i) Short-term maturity (three months or less)

(ii) Insignificant risk of changes in value.

11.4 CLASSIFICATION OF CASH FLOWS

According to As-31 (Revised) the cash flow statement should report cash flows during the period classified by operating, investing & financing activities. Thus cash flows are classified into three main categories :-

(1) Cash flows from operating activities

(2) Cash flows from investing activities

(3) Cash flows from financing activities

1. Cash flows from operating Activities

The amount of cash flows arising from operating activities is a very indicator of the extent of which the operations of the enterprise have generated sufficient cash flows to maintain the operating capability of the enterprise pay dividends, repay loans, 8& make new investments without resources to external sources of financing.

2. Cash flows From Investing Activities

Investing activities are the acquisition& disposal of long term assets & other investments not included in cash equivalents. The separate disclosure of cash flows arising from investing activities is important because the cash flow represent the extent to which expenditures have been made for intended to generate future incoming & cash flows.

3. Cash Flows From Financing Activities

Financing activities are activities that result in changes in the size & composition of the owner's capital (including preference share capital in the case of a company) and borrowings of the enterprise.

The separate disclose of cash flows arising from financing activities is important because it is useful in predicting claims on future cash flows by provides of funds to the enterprise.

Application of Funds

1. Sometimes some funds are lost during that period in trading operations Such loss of funds in trading amounts to an outflow of funds and is treated as an application of funds.
2. If during the year any preference shares are redeemed, it will result in the out flow of funds and is taken as an application of funds.
3. In case of repayment of loans or debentures also constitute an application of funds.
4. When any fixed asset is purchased it is also an application of funds or outflow from the business.

5. Payments of dividend & taxes are also an application of funds.
6. Any payment or expenses not related to the trading operations of the business amount to outflow of funds & taken as an application of funds.

Self-Check Exercise

1. What type of cash flow represents money received from selling goods or services?
2. Cash flow from purchasing or selling long-term assets is classified as what?
3. What type of cash flow involves money raised or spent on financing activities like issuing stock or repurchasing shares?

11.5 PREPARATION OF CASH FLOW STATEMENT

The Cash Flow Statement is prepared in three stages as given below:

(1) Net Profit before taxation and extraordinary items.

(2) Cash from Trading Operations

(3) Cash Flow Statement

(1) Net Profit before taxation and extraordinary items

This will not be equal to net profits as reported in profit and loss account. It is so because of taxation and certain non-operating items like loss or profit on sale of fixed assets, dividend received or paid, amount transferred to general reserve, provision for taxation and fictitious assets written off etc. charged to profit and loss account. Tax paid and non-operating items are adjusted to the figure of profit or loss in order to get the net profit before taxation and extraordinary items.

(2) Cash from Trading Operations

Net profit before taxation and extraordinary items is further adjusted with reference to depreciation in order to get the figure of cash from operations. The figure of cash from operations is further adjusted for changes in current assets (except cash, Bank Balance) tax paid and. current liabilities to get the amount of net cash provided or used by operational activities. All the increase in current assets except cash and decrease in current liabilities decrease cash. Likewise decreases in current assets cash and increase in current liabilities increase cash from operations. Changes in fixed assets and liabilities have not been adjusted as these are shown separately in the cash flow statement.

(3) Cash Flow Statement

The presentation of Cash Flow. Statement will now the according to Revised Accounting standard-3 on Cash Flow Statements. In the initial years, this Accounting Standard is recommendatory in character.

PREPARATION OF CASH FLOW STATEMENT

The Cash Flow Statement report cash flows during the period classified into three broad activities:

(i) 'Operating activities' which are principal revenue - producing activities.

(ii) 'Investing activities' which involve acquisition and disposal of long-term assets and other

CASH FLOWS

OPERATING ACTIVITIES	INVESTING ACTIVITIES	FINANCING ACTIVITIES
Examples of Cash Inflows	*Examples of Cash Inflows*	*Examples of Cash Inflows*
* Proceeds from sale goods and rendering of services	* Cash receipts from disposal of fixed assets and investments (other than cash equivalents)	* Cash proceeds from issue of of shares, debentures etc.

* Receipts from royalties' fees and commissions	* Interest and/or dividend Receipts	* Long-term borrowings from banks/financial institutions
* Cash receipts relating to futures, for wards, option and swap contracts where the contracts are held for trading purposes.	* Cash receipts from repayment of advances and loans made to third parties	
Examples of Cash out flows	*Examples of Cash out flows*	*Examples of Cash out flows*
* Payments to suppliers goods and services other securities (other	* Cash payment to acquire fixed assets, shares and * Interest paid than cash equivalents)	* Repayment of loan for * Repurchase of shares * Dividend paid
* Cash payments to and behalf of employees		
* Cash payments of income tax (other than distribution tax)	* Cash advance and loans given to third parties	* Dividend tax paid

Cash Flow Statement

(for the year ended .....)

	Rs.	Rs.
Cash Flows From Operating Activities Either		
Cash receipts from customers		
Cash paid to suppliers and employees	XXX	
Cash generated from operations	(XXX)	
Cash generated from operations	xxx	
Income-tax Paid . .	(XXXI	
Cash flow before extraordinary items	xxx	
Extraordinary items	xxx	
Net cash from (used in) Operating activities	XXX	
Or		
Net profit before tax and extraordinary items		
Adjustments for non-cash and non-operating items		xxx
(List of individual items such as depreciation, foreign exchangeloss, loss on sale of fixed assets, interest income, dividend income, interest expenses etc.)	xxx	
Operating profit before working capital changes		
Adjustments for changes in current assets and current liabilities (List of individual items)	xxx	xxx
Cash general from (used in) operations before tax xxx Income tax paid	xxx	
Cash flow before extraordinary items	xxx	
Extraordinary items (such as refund of tax)	xxx	

Net cash from (used in) operating activities		*xxx*	
Cash Flows From Investing Activities			
Individual Items of cash inflows and outflows from financing activities (such as purchase/sale or fixed assets, purchase or sale of investments, interest received, dividend received etc.)	xxx xxx		
Net Cash from fused in) investing activities		xxx	
Cash Flows From Financing Activities			
Individual items of cash inflows and outflows from financing activities (such as proceeds from issue of shares, long-term borrowings, repayment of long-term borrowings, interest paid, dividend paid etc.)	xxx		
Net cash from (used in) financing activities			xxx
Net Increase (Decrease in cash and cash equivalents)		xxx	
cash and cash equivalents at the beginning of the period		xxx	
cash and cash equivalents at the end of the period		xxx	

11.6 Format of Cash Flow Statement Approved by SBBI is given below :

Cash Flow Statement

(for the *year ended .....)*

XTZ Ltd. .

A. Cash Flow from Operating Activities

Net Profit/Loss before tax and extraordinary items Adjustments for:

Depreciation

Gain/Loss on sale of fixed assets Foreign exchange

Miscellaneous expenditure written off

Investment income

Interest

Dividend

Operating profit before working capital changes Adjustments for:

Trade and other receivable

Inventories

Trade: Payable.

Cash generated from operations Interest paid Direct taxes paid Cash flow before items

Extraordinary items *Net Cash* from *Operating* Activities

B. Cash Flow From Investing Activities Purchase of fixed assets

Sales of fixed assets Purchase of investments Sale of investments Interest received Dividend received.

Net Cash from/*used* in*investing activities*

C. Cash Flow From Financing Activities Proceeds from issue of share capital Proceeds from long-term borrowing/banks Payment of long-term borrowings Dividend paid *Net Cash from/used* in*financing activities Net* Increase/Decrease In *Cash* and*Cash Equivalent*
Cash and Cash Equivalents as at _____ (Opening Balance)
Cash and Cash Equivalents as at... (Closing Balance)

11.7 Illustration : The following are the comparative balances sheets of XYX Ltd., as on 31st December 1998 and 1999.

Liabilities	1998	1999	Assets	1998	1999
Share Capital			Land	1,00,000	1,50,000
(Shares of Rs. 10 each	3,50,000	3,70,000	Stocks	2,46,000	2,13,500
Profit & Loss *AI* c	50,400	52,800	Goodwill	50,000	25,000
9% Debentures	60,000	30,000	Cash and		
			Bank	42,000	35,000
Creditors	51,600	59,200	Temporary	3,000	4,000
			Debtors	71,000	84,500
	5.12.000	5.12.000		5.12.000	5.12,000

Other particulars Provided to you are ; (a) Dividends declared and paid during the year Rs. 17,500 (b) Land was revalued during the year at Rs. 1,50,000 and the profit Devaluation transferred to profit and loss accounts. You are required to prepare a Cash Flow Statement for the ended 31-12-1999.

Cash Flow Statement

{.For the year ended 31-12-1999)

	Rs.	Rs,
Cash Flows From Operating Activities		
Increase in the balance of P/L A/C	2,400	
Adjustments for non-cash and non-operating items:		
Profit on revaluation of land	(50,000)	
Goodwill written off	25,000	
Dividend declared	17.500	
Operating profit before working capital changes	(5,100)	
Adjustments for changes in current operating assets and liabilities		
Increase in creditors	7,600	
Decrease in stock	32,500	
Increase in debtors	(13.500)	

Cash generated from operations	21,500		
Income tax paid			
cash flows from extraordinary Items	21,500		
Net cash from operating activities		21,500	
Cash Flows From Investing Activities			
Cash Flows From Financing Activities			
Proceeds from issue of share capital	20,000		
Redemption of debentures	(30,000)		
Dividend paid	(17.500)		
Net cash used in financing activities			(27,500)
Net Decrease in cash and cash equivalents			(6,000)
Cash and cash equivalent at the beginning of the period			(45.000)
Cash and cash equivalent at the end of the period			39.000

Note: Temporary investments have been treated as liquid investments and hence cash equivalents.

Illustration: The following are the Balance Sheets of a company as at 31st Dec. 1998 and 31st December, 1999 :

Liabilities	1998	1999	Assets	1998	1999
Equity Share Capital	7,00,000	8,00,000	Fixed Assets	5,00,000	6,00,000
General Reserve	4,50,000	6,00,000	Additions	1.00.000	80,000
Profit & Loss Account	1,73,000	2,33,000		6,00,000	6,80,000
Provision for taxation	1,97,000	3,70,000	Depreciation	2,00,000	3,20,000
Proposed Dividend	1,50,000	1,50,000		4,00,000	3,60,000
Trade Creditors	7,00,000	9,00,000	Investments	1,20,000	
Bank Overdraft	11,50,000	14,00,000	Current Assets		
Creditors for Expenses	80,000	92,000	Debtors	13,00,000	21,85,000
			Stock at Cost	17,80.000	20,00,000
	36,00,000	45,45,000		36,00,000	45,45,000

The profit for the year 1999 as per profit and loss account after providing for depreciation amounted to Rs. 70,00,000 which was further adjustment as follows:

	Rs.	*Rs.*
P & L Balance b/f	1,73,000	
Add Profit after depreciation	7,00,000	
	20.000	8.93.000
Profit on sale on investments		3.60.000
Less Provision for taxation	1.50.000	
Transfer to Reserve		
Proposed Dividend	1.50.000	6.60.000
Balance C/f		2.33.000

You are informed that:

(i) The sales and purchases for the year 1999 amounted to Rs. 80,00,000 and Rs.65,00,000 respectively.

(ii) In arriving at the profit from the sale referred to already to cost of sales and administrative and selling expenses were deducted.

You are required to prepare a Cash Flow Statement for the year ended 31st December, 1999.

solution:

Cash Flow Statement

(For the *year ending 31st December, 1999)*

	Rs.	Rs.
Cash Flows From Operating Activities		
Net profit before tax and extraordinary items	*7,00,000*	
Adjustment for non-cash and non-extraordinary items:		
Depreciation (3,20,000-2,00,000)	2,00,000	
Operating profit before working capital changes	8,20,000	
Adjustments for changes in current operating assets a liabilities:		
Increase in trade creditors	2,00,000	
Increase in creditors for expenses	12,000	
Increase in debtors	(8,85,000)	
Increase in stock	(2,20,000)	
Cash generated from operation before tax	(73,000)	
Income tax paid (Working Note (i))	(1,87,000)	
Net cash used in *operating activities*		(2,60,000)
Cash Flows From Investing Activities		
Purchase of fixed assets		
Sale of investments (Working Note (ii))	(80,000)	
Net cash provided by investing activities	1.40.000	60,000
Cash Flows From Financing Activities		
Proceeds from the issue of share capital	1,00,000	
Dividend paid (Working Note (iii))	(1,50,000)	
Net cash used in *financing activities*		(50.000)
Net Decrease in cash & cash equivalents		(2,50,000)
Cash & cash equivalents at the beginning of the period		(11,50,000)
Cash & cash equivalents at the end of the period		(14,00,000)

Working Notes:

		Rs.
1.	Calculation of Income tax paid during the year	1.97.000
	Opening Balance of Provision for taxation	3.60.000
	Add: Provision made during the year	
	Less:. Closing Balance of Provision for tax	5.57.000
	Income tax paid during the year	3.70.000
		1.87.000
2.	Calculation of cash received from sale of Investments	
	Investment in the beginning of the year	1,20,000
	Investment at the end of the year	.....
	Cost of Investments sold	1,20,000

	Add: Profit on sale of investments	20.000
	Cash received from sale of investments	1,40,000

3. Calculation of cash paid for dividends

Proposed Dividend in the beginning of the year	1,50,000	*Add:*
Dividend proposed during the year		1,50,000
Proposed Dividend at the end of the year		3,00,000
Cash paid for dividend		1,50,000
		1,50,000

11.8 Importance of Cash Flow Statement

Cash Flow Statements are very helpful to managers in financial management. It is an essential tool of analysis for short planning and cash control. Some of the advantages of Cash Flow Statement are given below:

(i) Cash Flow Statement help in controlling the cash position of a business. Cash Flow Statements help in the process of the formulation and implementation of financial policies and plans.

(ii) Cash Flow Statement is more useful than funds flow as cash is more important for executing plans rather than working capital. They only can help short term financial planning.

(iii) Cash Flow Statement helps in planning repayment of loans, replacement of fixed assets and other similar other decisions regarding outflow of cash from the business as they provide information about the case generating ability of the business.

(iv) The Cash Flow Statement of a particular year when compared with the budget for that year reveals the extent to which the actual sources and applications of cash were in consonance with the budget.

(v) A series of intra-firms and inter-firm comparison of Cash Flow Statement reveals the trend of liquidity position of a firm over a period of time and in comparison to other firms of industry also.

(vi) The Cash Flow Statement can give reasons for absence of sufficient cash in business despite large profits shown in the accounts and also the presence of surplus cash despite losses in the books of accounts.

11.9 Limitations of Cash Flow Statement

Cash Flow Statement despite serving a number of objective of management, suffers from some limitations. Let us discuss some of these limitations.

(i) It is not easy to define the term 'cash'. Some people include items like cheques, stamps, postal orders etc. in cash, whereas others do not include these items while assessing the cash position.

(ii) The liquidity position of a business does not depend upon cash position only. In addition to cash it is also dependent upon those assets, which can be converted into cash. Exclusion of these assets while assessing the liquidity of a business obscures the true reporting of the ability of business in meeting its liabilities.

(iii) The changes of window dressing in cash position are more than in case of working capital position of a business.

(iv) A Funds Flow Statement presents a more complete picture than Cash Flow Statement, as working capital is a wider concept of Fund

Keywords

Cash Flow:- The movement of cash into and out of a business, reflecting the company's liquidity and ability to meet its short-term obligations.
Operating Cash Flow:- The cash generated or used by a company's core operating activities, excluding financing and investing activities.
Free Cash Flow:- The cash available after operating expenses and capital expenditures, representing the funds available for dividends, debt reduction, or investment.

11.10Self-Check Exercise

Short answer type Questions

1. What is the purpose of a Cash Flow Statement?
2. How is Operating Cash Flow calculated?

Long answer type questions

3. Explain the three sections of a Cash Flow Statement and how each contributes to the overall understanding of a company's financial health.
4. How does the Cash Flow Statement complement the Income Statement and Balance Sheet in providing a comprehensive view of a company's financial performance?

11.11 Self-Check Exercise (Answer Key)

1. Operating, 2. Investing, 3. Financing

Lesson No. 12

Author : Dr. J.S. Pasricha

NATURE OF COST ACCOUNTING

Structure

12.1 OBJECTIVE

Cost Accounting is one of the branches of accounting. Financial Accounting is yet another branch. Each of these has its own extent and scope. The objective of this Lesson is to enlight the students with the cost accounting system as a branch of accounting dealing with the classification, recording, allocation and summarization and reporting of current and prospective costs.

12.2 INTRODUCTION

The origin of Cost Accounting can be traced to the beginning of 20th century. The system of large-scale production in factories created new problems in accounting. The amount and varieties of expenditure increased and many new items of cost not only increased the calculations but also gained prominence. The financial accounting was exposed of its limitations. It failed to meet the requirements of

12.3 FINANCIAL ACCOUNTING AND ITS LIMITATIONS

FINANCIAL ACCOUNTING The definition of accounting given by the chartered Institute of Management Accountants, London is as given below :

1. "the classification and recording of monetary transactions; and
2. the presentation and interpretation of the results of those transactions in order to assess performance over a period and the financial position at a given date; and
3. the monetary projection of future activities arising from alternative planned courses of action.*

The major limitations of financial accounting are explained below:

1. Financial accounting does not give clear picture of operating efficiency when prices are rising or falling on account of inflation or depression. It is possible that profits may be more or less, not because of efficiency or inefficiency but because of inflation or depression.
2. Financial accounting discloses only the net result of the collective activities of business as a whole. It does not indicate profit or loss of each department, Job, prices or contract. Thus, exact point of inefficiency remains unreported.
3. In Financial accounting, there is no such system by which accounts are classified so as to give data regarding costs by department processes, product in the manufacturing divisions, by units of products lines and sale territories.
4. In Financial accounting costs are not available as an aid in determining prices of the products and services.
5. It does not provide information for a proper control of materials and supplies, wages labour and overheads.
6. In Financial accounting, expenses are not classified as to direct and indirect items and are not assigned to the products at each stage of production to show the controllable or uncontrollable items of overhead costs.
7. Financial accounting is mainly historical and tells about the cost already incurred. It does not provide day to day cost information to the management for making effective plans for the coming year and the period after that as financial data are summarized at the end of the accounting period.
8. It does not supply useful data to the management for taking various financial decisions such as introduction of new products, replacement of labour by machines.

12.4 DEFINITIONS

12.4.1 Cost

According to Shilling law, "Cost represents the resources that have been or must be sacrificed to attain a particular objective."

12.4.2 Cost Unit

"The cost unit is a unit of product or service in relation to which costs are ascertained."

12.4.3 Cost Centre

"The cost centre is a production or service location, function, activity or item of equipment for which costs are accumulated.*

12.4.4 Costing

"Costing* has been defined as "the technique process of ascertaining costs". It involves

systems, methods and techniques of accumulation, classification, analysis and appropriate allocation of expenditure incurred in respect of a product of service.

12.4.5 Cost Accountancy

The term 'Cost accountancy', includes costing, cost accounting, budgetary control, cost control and cost audit.

12.4.6 Cost Accounting

Cost Accounting means "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 purpose of managerial decision-making/

Thus there exists a distinction between the meaning conveyed by "Cost Accounting' and "Cost Accountancy". Therefore, strictly speaking cost accounting is a formal system of recording, analysing and allotment of costs to cost centres or costs units. On the other hand, cost accountancy embraces, in addition to cost accounting, the principles, methods and techniques by means of which cost control is exercised and the profitability is determined. It involves the system of reporting the data for management decisions.

Self Check Exercise

1. What is a cost unit in cost accounting?
   a) The total cost of production
   b) The cost assigned to a single unit of product or service
   c) The fixed costs incurred by a business
   d) The total revenue generated by a product

2. What is the primary purpose of cost accounting?
   a) To calculate total revenue
   b) To determine the financial position of a business
   c) To provide information for decision-making and control
   d) To assess market competition

3. Which of the following is an example of a cost centre?
   a) Marketing department
   b) Finished goods inventory
   c) Direct labor cost
   d) Variable manufacturing overhead

12.5 SCOPE OF COST ACCOUNTING

From the above it is clear that the scope of cost accounting includes :

1. Cost Ascertainment;
2. Cost Presentation; and
3. Cost Control.

12.5.1 Cost Ascertainment

Cost Ascertainment refers to :

(i) The collection and analysis of expenses.

(ii) The measurement of production at different stages.

(iii) The linking up of production with expenses.

For the purpose of cost ascertainment, Costing has developed systems, methods, and techniques.

(1) systems like historical (actual) costs, estimated costs, standard costs are used for collection of expenses.

(2) methods of costing such as job costing, process costing, output costing etc. are the instruments of measurement of productions; and

(3) techniques like absorption costing, marginal costing have been evolved linking up production with expenses.

(1) setting up standard targets for express and production performance;
(2) comparing the actual with the standards to find out variations, if any;
(3) analyzing reasons for such variation; and
(4) taking up corrective action to eliminate the variation and thus bringing up actual performance to the pre-set standards. In this context management needs costs data so that responsibility for incurrence of cost can be identified. The cost concepts covered here are :
    (1) Responsibility Cost,
    (2) Controllable and Non-Controllable Costs; and
    (3) Direct and Indirect Cost.

12.6 OBJECTIVES OF COST ACCOUNTING

The following are the main objectives of Cost Accounting :

1. Ascertainment of Cost : The objective cost accounting is to ascertain the cost per unit of the different products manufactured by a business concern.
2. Analysis of Cost: The objective of cost accounting is to provide a correct analysis of cost both of the process or operation and by different elements of cost.
3. Identify sources of Wastage : The objective is to disclose sources of wastage whether of material, time or expense or in the use of machinery, equipment and tools and to prepare such reports which may be necessary to control such wastage.
4. Provide required Cost data : The objective is to provide requisite cost data and serve as a guide for price fixation of products manufactured or services rendered.
5. Ascertain profitability : The objective is to ascertain the profitability of each of the products and advise the management as to how these profits can be maximized is another objective of Cost Accounting.
6. Effective Control : Next objective is to exercise effective control on stocks of raw materials, work in progress consumable store and finished goods in order to minimize the capital locked up in these stocks.
7. Reveal Sources of economy : The objective of cost accounting is to reveal sources of economy by installing and implementing a system of cost control for materials, labour and overheads.
8. Advising Management : To advice management on future expansion policies and proposed capital projects, is another objective of cost accounting.
9. To organize an effective information system so that different levels of management may get the required information at the right time, in right form for carrying out their individual responsibilities in an efficient manner.
10. To supply useful data to the management to take various financial decisions such as introduction of new products, replacement of labour by machine etc.
11. To organize cost reduction programswith the help of different departmental managers.
12. To provide specialized services of cost audit in order to prevent the errors and frauds and to facilitate prompt and reliable information to the management.

12.6.1 Advantages of Cost Accounting :

The many advantages of Cost Accounting System may be summarized as follows :

1. The Cost Accounting System enables the manufacturer to ascertain the exact cost of

each specific unit of output and the extent to which each element of expenditure contributes to such cost.

2. It enables the manufacturer to fix selling prices on the basis of cost of production and thus saves him from losses, which may arise due to injudicious fixation of prices without actually looking to the cost of production.
3. It provides a reliable basis upon which tenders estimates may be prepared.
4. The profitable and unprofitable project or assignment can be readily disclosed.
5. It assists the manufacturer in ascertaining the importance of each element of cost or process and in determining where is greater scope of economy ?
6. It facilitates the detection and prevention of wastage, leakage and inefficiencies.
7. It assists in controlling costs with the application of standard costing and budgetary control system.
8. Cost Accounting system provides an independent and most reliable check on the accuracy of financial accounts by means of reconciliation of profits as shown by cost and financial accounts.

12.6.2 Limitations of Cost Accounting

It is sometimes remarked that cost accounting is not as exact science and there is no such things as 'exact' of 'true' cost. This is because of the fact that there may not be uniformity in cost ascertained by different cost accountants from the same data. Disagreement in cost of a product arises on account of different procedures of cost ascertainment followed by the accountants. Following are certain areas in cost ascertainment wherein there are varied approaches open and where the cost accountant has to choose the one which he thinks best :

1. Determination of Expenses entering into Cost of Production : It includes determination of non-cost items, e.g. whether interest on capital or cash discount should be considered in calculation or be excluded.
2. Computation of Material Cost or Product Cost: There are different methods of pricing material such as FIFO, LIFO, average cost method, standard cost method, etc. The material cost of product differs according to the method of pricing adopted.
3. Apportionment and Absorption of Overheads : Overheads are apportioned to cost centres on the basis of floor area, capital value, number of employees etc. Similarly overheads are absorbed by different methods such as percentage of direct material cost, percentage of wages, direct labour hours, machine hours etc.
4. Choice of technique of cost ascertainment : Different costing techniques like absorption (total) costing, marginal costing are available.

In above cases the cost accountants has to make his own assumptions and select method which he deems proper in determination[1] of cost and in consequence the disagreement among the cost accountants is obvious.

(A) The nature of cost data requires for decision-making may differ according to the purpose for which it is needed. Cost control requires standard cost and actual cost to be ascertained currently, whereas for budgeting, estimated costs are necessary.

(B) Costs have no usefulness in themselves; their value depends only upon the action taken by the management in the light of the information they reveal. Cost accountant has no powers to take decisions and enforce them. He is a staff official acting in advisory capacity to the executives to present necessary information with

his expert recommendations on the issue. It is for the directors and other managerial personnel to take decisions and act on them.

Self-Check Exercise (True/False)

4. Cost accounting provides precise and exact information about costs.

5. Cost accounting is only applicable to manufacturing industries

6. Cost accounting provides precise and exact information about costs.

12.7 METHODS OF COSTING

Different methods of costing are applied for ascertaining unit cost in different industries based on the nature of operation and unit of finished product involved. All these methods have the same general principles but they differ in so far as the methods used in collecting and presenting cost data are concerned. Basically, there are three methods of ascertaining costs :

(1) Job costing.

(2) Process costing.

(3) Multiple or Composite costing.

12.7.1 JOB COSTING

Job Costing is applied to special order type of industry devoted to the execution of specific orders such as Printing press, house building, ship building manufacture of heavy electrical machinery, etc. The main objective of job costing is to ascertain cost and profit or loss in respect of each job, contract or project undertaken.

The following methods are, included in job costing :

(A) Contract (or Terminal) Costing : This method of costing is employed in business where separate constructional contracts are undertaken and it is desirable to

- ascertain the exact cost of each contract. Contract costing is generally applicable to the business engaged in building construction, road construction, bridge building, ship building etc.

(B) Batch Costing : This method of costing is applied to industries where production is carried on in batches. Under this method, a batch of similar products is treated as one job and then the batch is divided by total numbers in the batch in order to arrive at the unit cost of articles produced. Batch costing is generally employed in industries engaged in biscuit manufacture, toy making, spare parts manufacture, ready-made garments etc.

12.7.2 PROCESS COSTING

This method applied to mass production type of industries engaged in the continuous production of uniform standard products such as chemicals, oils, textiles, paints, cement, mining, colliery, flour etc. The main objective of process costing is to ascertain the cost of process of operation involved in converting raw material into finished products. The following methods are included in process costing :

(A) Single Output (or Unit Costing) : This method is applied to ascertain the cost per unit of output where the production is continuous and the units manufactured are identical or uniform. Single costing is generally adopted where the manufacturing concern is engaged in producing only one type of product or a few grades of the same product. The method is commonly used in case of industries like collieries, brick works, flour mills, quarries, cement mills, iron and steel works, paper mills etc.

(B) Operating Costing : Operating costing is the system of costing employed to ascertain the cost of providing or operating a service. This system of costing is adopted by undertakings which render services rather than manufacture goods such as railways road transport, tramways, electricity companies, gas companies, water works etc.

(C) Operation Costing : Operation costing represents a refinement of process costing. Under this method, each operation in each process or stage of production is separately cost. Operation cost generally refer to, conversion cost i.e. cost of labour and overheads. At the end of each operation the unit operation cost is ascertained by dividing the conversion cost by output. Thereafter the cost of finished unit is determined by adding the material cost plus the cost of several operations through which it passes. This method is suitable to those industries which are connected with mass production of repetitive nature.

12.7.3 MULTIPLE OR COMPOSITE COSTING

Multiple or composite costing is applied to ascertain the cost of complex products manufactured by a factory, where no single system of costing is applicable. Under :his method the total cost is ascertained by aggregating component cost which are collected by both job and process costing. Multiple costing applies to industries engaged in the production of bicycle, motorcycles, motor cars, radios, typewriter, engines, machine tools, aero planes and other complex, products.

12.7.4. ILLUSTRATION : Specify the method of Costing and the Cost Unit applicable to the following industries :

Industries			Method		Answers Cost Unit
(a)	Ship-building	—>	Contract Costing	—▶	a ship
(b)	Toy-making	—*y*	Batch costing	-*•	a batch
(c)	Textiles	->	Process costing	-»	meter
(d)	Sugar	-»	Process cost	—>	tone or Kg.
(e)	Cement		Unit costing	—▶	a bag *of*tone
(0	Road transport	->	Operating costing	-»	Km.
(g)	Radio	—▶	Multiple costing	->	a radio
(h)	Oil		Process costing	—>	a liter
(i)	Hospital	—>	Operating costing		Patient, bed
(j)	Chemicals	->	Process costing	—»	a Jar or liter
(k)	Medicines	—>	Batch costing	->	a batch
(i)	Motor Car	—>	Multiple costing	-»	a car
(m)	Bicycle	-»	Multiple Costing		a cycle
(n)	Catering	->	Operating costing		a meal
(o)	Printing	->	Job costing	->	a job
(P)	Aerated water	-*	Unit costing		a dozen
(q)	Dairy	-*	Unit costing	—>	a dozen
(r)	Brewery		Unit or Process costing	-»	a bottle or a barrel
(s)	Furniture	-»	Batch costing	->	a batch
(t)	House building	->	Contract costing	->	building

12.8 FINANCIAL ACCOUNTING VS. COST ACCOUNTING

Cost accounting and Financial accounting as we know are two different branches of accounting and main objective of both of them is to provide information by recording the business systematically and scientifically so that it may serve the purpose of the management

for policy formulation and of controlling and to provide necessary protection to the outsides. Both are based on double entry system and their roles are supplementary. Besides, having some similarities these two are very different form each other some difference are as under :

	FINANCIAL ACCOUNTING		COST ACCOUNTING
1.	It gives information in general way about the profit and loss and financial position of the business.	1.	It gives information to the management for proper planning, operation control and decision making.
2.	It lays emphasis on the recording aspect without attaching any importance to control.	2.	It provides detailed system of control for materials, labour and overhead costs with the help of standard costing and budgetary control.
3.	It reports operating results and financial position usually at the end of the year.	3.	It gives information through cost reports to management as and when desired.
4.	Financial accounts are the accounts of the whole business, as they disclose the result of a business as a whole.	4.	Cost accounting is only a part of financial accounting and discloses results of each product, job or service.
5.	The costs are reported in aggregate in financial accounts.	5.	The cost is broken down on a unit basis in cost accounts.
6.	Financial accounting is concerned with external transaction (i.e.transaction between business concern and third party based on payment and receipt of cash.)	6.	Cost accounts are concerned with internal transactions which do not form the basis of payment or receipt of cash.
7.	Monetary information is only used.	7.	Non-monetary information is also used, e.g. units.
8.	Stocks are valued at cost or market price which is less.	8.	Stocks are valued at cost.
9.	These accounts are kept in such a way	9.	These accounts are generally kept voluntarily to meet the requirements of management. But now it is compulsory for some manufacturing companies to keep cost records.

12.9 INSTALLATION OF COSTING SYSTEM (Designing of a Cost Accounting System)

A formal system of cost accounting is essential for ascertaining and controlling costs. And, the requirements of two firms are not alike and the system must be designed to meet the individual needs to each.

12.9.1 **Objectives of Designing**

(1) It will aid in planning the future and controlling the present.
(2) It will aid in establishing selling prices.
(3) It will provide a means of costing inventories.

(4) It will compute the cost of sales.
(5) It will measure the efficiency of materials, employees, and machines.
(6) It will furnish data for various other analytical processes.

Self-Check Exercise

7. What is the primary unit of cost measurement in job costing?
8. What type of industries is process costing commonly used in?

12.9.2 Steps in Designing

While installing a costing system, the cost accountant should examine certain issues and take systematic steps in its installation. These steps are :

(1) Organizational structure of the company

The organization set-up should, therefore, be examined thoroughly, with reference to responsibility and authority assigned to the various functionaries. The organization charts must be prepared in such a manner that highlights the authority and responsibility relationships between managers, superintendents and departmental heads, who are responsible for:

(1) Providing detailed information needed for accounting department;
(2) Incurring expenditures for materials, labour and other costs; and
(3) Reporting to those in charge.

(2) Procedures and processes :

The cost accounting system must reflect the manufacturing procedures, processes, methods, and the marketing and administrative organization of a particular company.

(3) Nature of Product :

It is essential to examine the nature of products manufactured, methods and stages of production cycle; the number of products and quantity manufactured of each product.

(4) Type of cost information :

The service rendered by the accountant is judged by the prompt presentation of meaningful costs reports and statements to management. A good costing system of cost accounting will provide information which helps in decision-making.

(5) Organization of cost office :

The cost office should be properly organized, and as far as possible, it should be situated adjacent to the factory so that delay in routing out documents or removal of discrepancies and doubts is avoided. Normally, the duties of cost office are divided into following categories:

(i) Stores Accounts.
(ii) Labour Accounts.
(iii) Cost Accounts.
(iv) Cost Control Accounts.

(6) Costing Department and its relationship with other departments :

The costing department is responsible for the presentation of the operating statements and cost analysis for management action, including areas of inefficiency and wastage, and relative profitability of products. Costing system should be designed in such a manner so as to serve these purposes.

(7) Legal requirements and installation of cost :

It is equally important to weight the cost of the system against its advantages. There are certain requirements imposed on an organization that necessitate the establishment of minimum costing system. For example, maintenance of cost audit records as required under the Companies Amendment Act, 1965, laws like Income tax, and Securities (Contract) Regulation Act prescribe certain requirement regarding record keeping and reporting.

12.9.3 Essentials of a good costing system :

(1) Simplicity and adaptability
(2) Accurate and speedy statistics.
(3) Admit comparison.
(4) Standardization.
(5) Co-ordination.
(6) Economical

Keywords

Cost Accounting:- A branch of accounting that focuses on the classification, recording, and analysis of costs associated with production, operations, or other business activities.

Direct Costs:-Costs that can be directly attributed to a specific product, service, or department, such as raw materials and direct labor.

Indirect Costs:-Costs that cannot be directly traced to a specific product or service, often including overhead expenses like rent, utilities, and administrative salaries.

Fixed Costs:-Costs that remain constant regardless of the level of production or sales, such as rent and salaries.

12.10 Exercise

Short answer type questions

1. Explain the main purpose of cost accounting in business.
2. How does cost accounting differ from financial accounting?

Long answer type questions

3. Define ‘Cost’, ‘Cost accounting' and 'Costing'. How the cost accounting is different from financial accounting ?
4. What are the main objectives and limitations of cost accounting?
5. What are the techniques of costing?
6. Explain how will you go about the task of installing a cost accounting system in an industry?

12.11 Self-Check Exercise (Answer Key)

1.b, 2.c, 3.a, 4.False, 5.False, 6.True 7.Job, 8.Continous

Recommended Texts and Readings:

Charles T. Horngren, and Srikant M. Datar (2012). Cost Accounting: A Managerial Emphasis, Pearson, Chennai, 14th Edition.

Lesson No. 13

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ELEMENTS OF COST

13.1 OBJECTIVE

The main objective of this lesson is to introduce the students with the various elements of cost. The term ‘elements of cost’ has been defined as “the constituent parts of costs according to the factors upon which expenditure is incurred, namely, material labour and expenses." In practice, for different purposes different kinds of information is required, so, attempt has been made to classify the costs on the basis of elements, functions, variability, controllability and normality.

13.2 INTRODUCTION

Cost refers to the amount of expenditure incurred on, or attributable to a given thing. Costs which are classified according to factors upon which expenditure is primarily incurred, namely, materials cost, wages and expenses are known as elements of cost. Cost may be basically classified as ‘Direct costs’ and ‘Indirect costs'. Costs which can be directly identified with cost centres, processes, production units are direct costs. Examples are: Cost of yarn in the manufacture of cloth, wages payable to a worker for weaving the cloth etc. Costs which can not be identified with cost centres of cost units but are of a general character are indirect costs. Examples are rent of factory, salary of the factory manager, salary of a foreman or supervisor etc.

13.3 COST ELEMENTS AND COST CLASSIFICATION

The elements of cost can be divided into direct cost and indirect cost as follows:

1. Direct Material Cost
2. Direct Labour cost
3. DirectExpense

4. Overhead

13.3.1 CLASSIFICATION ON THE BASIS OF ELEMENTS

1. Direct Material Cost

Direct materials are those materials which can be identified in the product and can be conveniently measured and directly charged to the product. Thus, these materials directly enter the product and form a part of finished product. For example, timber in furniture making, cloth in dress making, bricks in building a house. The following arc normally classified as direct materials : . .

1. All raw material like jute in the manufacture of gunny bags, pig iron in foundry, and fruit in canning industry.
2. Materials specifically purchased for a specific job, process or order like gum for book binding, starch powder for dressing yarn.
3. Parts or components purchased or produced like batteries for transistor radios and types for cycle.
4. Primary packing materials like cartoon wrapping, cardboard boxes etc.

However in some cases, though the material is a part of the finished product yet it isnot treated as direct material. For example, sewing thread in the dress making and nail in furniture making. This is because they are used in comparatively small quantities and it would be futile elaboration to make an analysis of them for the purpose of a direct charge. Thus, such materials are treated as indirect materials.

2. Direct Labour Cost

Direct labour is all labour expended in altering the construction composition confirmation or condition of the product. In simple words, it is that labour which can be conveniently identified or attributed wholly to a particular job, product or process or expended in converting raw materials into finished goods.

Wages of such labour are known as direct wages. Thus, it includes payment made to the following groups of labour:

(i) Labour engaged on the actual production of the product or carrying out of an operation or process.

(ii) Labour engages in aiding the manufacturing way of supervision, maintenance, tools setting, transportation of material etc.

(iii) inspectors analysis etc. specially required for such production.

The wage paid to supervisors, inspectors etc. though not direct labour, can be treated as direct labour, if they are directly engaged on specific product or process and the hours they spend on it can be directly measured without much of an effort. Similarly where the cost is not significant like the wage of trainees or apprentices, their labour though directly spend on a product is not treated as direct labour.

3. Direct Expenses

Direct expenses include all expenditure other than direct material or direct labour that are specifically incurred for a particular product or process. Such expenses are charged directly to the particular cost centre as part of the prime cost. Examples of direct expenses are :

(i) Excise duty, (ii) Royalty, (iii) Architect or Surveyor fees, (iv) Cost of rectifying defective work, (v) travelling expenses to the site, (vi) Experimental expenses of pilot projects, (vii) Expenses of designing of drawing of patterns of model, (viii) repairs and maintenance

plant obtained on hire, (ix) Hire of special equipment obtained for a contract.

4. Overheads

Overheads may be defined as the aggregate of the cost of indirect materials, indirect labour and such other expenses including services as cannot conveniently be charged direct to specific cost units. Thus overheads are all expenses other than direct expenses. In general terms overheads comprises of all expenses incurred for or in connection with in the general organisation of the whole or part of the undertaking i.e. the cost of operating supplied and services used by the undertaking and including the maintenance of capital assets.

(B) Indirect Cost

The main group into which overheads/ indirect costs can be divided are as follows:

(a) Indirect Material Cost
(b) Indirect Labour Cost
(c) Indirect Expenses

(a) Indirect Material Cost: It refers to material cost which cannot be allocated but which can be apportioned to, or absorbed by cost centres or cost units e.g. cotton waste, oil grease used in keeping the machines in running condition.

(b) Indirect Labour Cost: If refers to the cost of remuneration of the employees of an undertaking which cannot be allocated but which can be apportioned to, or absorbed by cost centres of cost units, e.g. salary of the factory manager, salary paid to the factory supervisor etc.

(c) Indirect Expenses: Expenses which cannot be allocated but which can be apportioned to or absorbed by cost centres or cost units e.g. Factory rent, depreciation of plant and machinery, insurance of factory premises, rates taxes etc. are known as indirect expenses.

13.3.2 CLASSIFICATION ON THE BASIS OF FUNCTIONS

(a) Factory Overheads
(b) Office and Administration Overheads
(c) Selling and Distribution Overheads

(a) Factory Overheads: Factory overheads includes all the indirect expenses incurred in the factory in connection with manufacturing operations. Factory overheads comprises the cost of indirect materials, indirect labour and all other indirect expenses incurred in running of the works of factory e.g. oil cotton waste of storekeeper, foremen, supervisors, factory rent, rates, depreciation of plant and machinery, power and fuel etc.

(b) Office and Administration Overheads: These include all expenses relating to the direction, control and administration of an undertaking. In other words office and administration overhead refer to general office expenses of administration and control of business e.g. office rent and rates, office lighting, depreciation of office furniture and buildings, office stationary, audit fee, director's remuneration bank charges etc.

(c) Selling and Distribution Overheads: These include all indirect expenses incurred for promoting sales and retaining customers and for delivering an article after its manufacture to the consumer e.g. cost of advertisement, salaries of salesmen, commission of sales, rent and rates of the showrooms, carriage outwards, packing charges, running and maintenance of delivery vans, rent of warehouse etc.

13.3.3 CLASSIFICATION ON THE BASIS OF VARIABILITY

According to this classification costs are classified according to the behaviour in relation to changes in the level of activity or volume of production. On this basis costs are classified into three groups viz.

(a) Fixed or period costs
(b) Variable or product costs
(c) Semi-variable costs

(a) Fixed or Period Costs : These are commonly described as those which remain fixed in total amount and decreases per unit as production increases and increases per unit as production declines. Example of fixed cost 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.

(b) Variable or Product Costs: These are those which vary in total in direct proportion to the volume/output. These cost per unit remain relatively constant with 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.

(c) Semi-Variable Costs: These are those which are partly fixed variable. For example, telephone expenses include a fixed portion of annual charges plus variable charge according to calls. Thus total telephone expenses are semi-variable. Other examples of such costs are depreciation, repair and maintenance of building and plants etc.

13.3.4 CLASSIFICATION ON THE BASIS OF CONTROLLABILITY

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

(a) Controllable Costs.
(b) Uncontrollable Costs.

(a) Controllable Costs: Controllable costs are those which are influenced by the action of a specified member of an undertaking that is to say, cost 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, direct costs include direct material, direct labour and some of the overhead expenses are controllable by lower level of management.

(b) Uncontrollable Costs: Uncontrollable costs are those which cannot be influenced by the action of specified member of an undertaking, that is to say, which are not 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 costs, which are incurred by one service section and is apportioned to another which receives the services is not controllable by the latter.

The distinction between controllable and uncontrollable is sometimes left to individual judgement 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 a point of view of one level of management, may be uncontrollable from another point of view. This is partly so

in case of fixed costs.

13.3.5 CLASSIFICATION ON THE BASIS OF NORMALITY

Under this, costs are classified according to whether these costs are normally incurred or not at 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.

(a) Normal Cost

(b) Abnormal Cost

(a) Normal Cost: It is the cost which is normally incurred at given level of output in the conditions in which that level of output is normally attained. It is a part of cost of production.

(b) Abnormal Cost: It is the cost which is not normally incurred at a given level of output in the condition in which that level of output is normally attained. It is not a part of cost of production and charged to Costing Profit & Loss Account.

Self Check Questions

(a) Define direct costs.

(b) How cost is classified on the basis of function?

13.4 PRODUCTION C0ST AND ITS COMPOSITION

Production cost is the sum total of both direct and indirect costs connected with production. The official Terminology defines production cost as “Prime Cost plus absorbed production overhead."

Cost — Direct Cost + Indirect Cost

or

Material Cost + Labour Cost + Expense Cost

Production Cost — Prime Cost + Absorbed Production overhead

or

Production Cost — Direct Material cost + Direct Labour Cost + Direct expenses + Indirect Material cost + Indirect Labour cost + Indirect expenses (all connected with Production)

or

Production Cost — Prime Cost + Overheads/Indirect Cost connected with production

Thus, direct cost and prime cost are virtually the same and indirect cost and overhead are also the same.

13.4.1 TOTAL/ABSORPTION COSTING APPROACH

The total costing approach is also known as the full costing or absorption costing and orthodox costing approach. According to this approach, all costs, whether fixed or variable are treated as product costs.

13.4.2 VARIABLE COSTING APPROACH

In this approach, product cost includes only variable cost. Fixed cost is transferred in its entirety, to the Profit and loss account.

13.4.3 ALTERNATIVE APPROACH TO PRODUCTION COST

Based on the distinction between fixed and variable cost, students can distinguish two alternative approaches to production cost.

Total Costing Approach		Variable Costing Approach	
Direct Costs: Material		Direct Cost: Material Labour	
Labour		Expenses	
Expenses			
Prime Cost		Prime Cost Indirect	
Indirect Cost: Materials Labour	XXX	Costs: Materials (Variable) Labour	XXX
Expenses		(Variable) Expenses (Variable)	
Production Cost		Production Cost	
Selling and Distribution Overhead		Variable selling and Distribution	
(total)	XXX	overhead	XXX
Administration (total)			
Total Cost	xxxx	Total Cost	xxxx

13.5 COST SHEET

Cost Sheet is a statement presenting the items entering into cost of production and service analysed by their elements, function and even by their behaviour, within the strict meaning of the term it does not include sales proceeds and profit earned. If these include it is called as 'Statement of production.'

Under this system an analysis of the different elements of the cost is made so as to ascertained the prime cost, factory cost, office cost and total cost.

1. Prime cost is the aggregate of all direct costs, viz. direct material, direct labour and direct expenses.
2. Works (factory) cost is the total of prime cost and factory overheads.
3. Cost of production is the sum total of works cost and administrative overheads.
4. Cost of sales is the sum total of cost of production and selling and distribution overheads.

13.5.1 SPECIMEN OF SIMPLE COST SHEET

	Total Cost	Per Unit Cost
Direct Material consumed	XXX	XX
Direct Wages	XXX	XX
Direct Expenses	XXX	XX
(1) Prime Cost	XXX	XX
Add: Factory (works) overheads	XXX	XX
(2) Work Cost	XXX	XX
Add: Administrative overheads	XXX	XX
(3) Cost of Production	XXX	XX
Add: Selling & Distribution overhead	XXX	XX
(4) Cost of Sales	XXX	XX

However, the same information in relation to cost, sales and profit may be presented in the form of a ledger account known as Production or Manufacturing Account. This account is debited with the opening stock and all items of cost and credited with sales revenue and closing stock, so that the balancing figure shows either profit or loss.

13.5.2 SPECIMEN OF TYPICAJL C08T 8HEET

Monthly ending .....

	Rs.	Unit Produced Total Cost (Rs.)	Per Unit
Direct Material			
Opening Stock of material	XXX		
	XXX		
Add: Purchases of materials	XXXX		
	XXX		
Less: Closing stock of materials		XXXX	XXXX
Material consumed Direct Wages		XXXX	XXXX
Direct Expenses		XXXX	XXXX
(1) Prime Cost Add:		XXXX	XXXX
Factory (Works) Overheads:			
Fuel-Power and water (Factory)	XXX		
Lighting and heating Indirect	XXX		
Materials Wages of foremen and	XXX		
other Indirect labour	XXX		
Drawing office, works office expenses	XXX		
Depreciation of Plant, equipment Depreciation on	XXX		
factory land and building Factory rent, taxes and	XXX		
insurance Less: Scrap value of defective work Add	XXX		
: Work in Progress (opening)	XXX		
	XX	XXXX	
Less: Work in Progress (closing)		XX	
		XXXX	
Add: Administrative Overheads:		XXX	XXXX
Office rent, insurance, lighting, clearing		XXXX	XXXX
Office salary			
Telephone, law expenses, audit fees			
Depreciation on office building and	XXX		
furniture	XXX		
Director's remuneration General Manager's	XXX		
salary Printing and Stationery			
(3) Total cost of Production	XX		
	XXX		
	XXX		
	XXX	XXXX	XXXX
		XXXX	XXXX

Add: Opening stock of finished products		XXXX	XXXX
		XXXX	**XXXX**
Less: Closing stock of finished products		**XXXX**	**XXXX**
(4) Cost of goods sold		**XXXX**	**XXXX**
Add: Selling and Distribution Overheads:	XXX		
Showroom expenses Salesmen's	**XXX**		
salaries and commission Bad debts	**XXX**		
Discount of distributors Warehouse rent and	**XXX**		
other expenses Carriage outwards and	**XXX**		
delivery expenses Advertisement	**XXX**		
(5) Cost of sales	**XXX**		
Net Profit	**XXX**	**XXXX**	**XXXX**
(6) Selling Price		**XXXX**	**XXXX**
		XXXX	**XXXX**
		XXXX	**xxxx**

13.5.3 PURPOSE OF COST SHEET

The cost sheet is a statement of all expenses/costs incurred or expected to be incurred during a given period. It is prepared at convenient intervals such as, weekly, fortnightly, monthly, quarterly, half-yearly or annually.

A cost sheet serves the following purposes:

1. It discloses the total components by stages and cost per unit of output during a period.
2. It provides data for planning, production, fixing sale price and submitting tenders and quotations.
3. It facilitates comparative study of costs with previous costs sheets to know the cost trends and also with standard cost to check the variation from actual costs.
4. It enables close watch over the cost for cost control.

Self Check Exercise

Indicate whether the following statements are true or false:

(c) Cost sheet is the same as statement of cost and profit.

(d) Unit costing is applied in those industries where different products are produced simultaneously.

(e) In mining industry, the unit of cost is per tonne.

13.6 TENDER OR QUOTATIONS

Very often, a producer in response to an advertisement in press, is required to submit a tender or to quote prices for the supply of the commodities he produces or for completing a job. A tender has to be prepared very carefully as the receipts of orders depend upon the acceptance of quotations or tenders supplied by the manufacturers. The preparation of tenders require information regarding prime costs, works, administration and selling overheads and profit of the proceeding period. The manufacturers, has to ascertain and find out the possible changes in prices of material, rates of wages and other costs. He has to ascertain the amount of variable, semi-variable and fixed overheads on the basis of past experience. He must also have a reasonable amount of profit by taking into consideration the market condition. In preparation of estimates or tenders, overheads are generally not given. They are estimated as percentage of estimates i.e. works overheads on wages basis and selling and distribution overheads on works cost basis etc.

13.7 ILLUSTRATION

Prepare a cost sheet from the following data to find out Profit and Cost per Unit.

	Rs.
Raw material consumed	1,60,000
Direct Wages	80,000
Factory overheads	16,000
Office overheads (10% of factory cost)	—
Selling overheads Units Produced - 4000 Unit Sold - 3,600 Selling price per unit Rs. 100.	12,000

[/UTION :

Cost Sheet of. ..... for the period ending.

Unit Produced 4,000	Per Unit Rs.	Total Rs.
Raw materials consumed	40.00	1,60,000
Direct Wages	20.00	80,000
Prime Cost	60.00	2,40,000
Factory overheads	4.00	16,000
Factory Cost or Production Cost	64.00	2,56,000
Add : Office Overheads (10% Rs. 2,56,000)	6.40	25,600
Adjustment for finished goods inventory		
Add : Opening inventory Less : Closing inventory		
Units Produced 4,000 Units Sold 3,600		
Closing inventory 400		28,160
Cost of goods Sold (@ Rs. 64+6.40)	70.4	2,53,440
Selling overheads (as given)	3.33	12,000
Cost of sales	73.73	2,65,440
Profit (B/F)	26.27	94,560
Sales 3600x100	100.00	3,60,000

13.8KEYWORDS

Cost is the amount of resources, usually measured in monetary terms, incurred or sacrificed to achieve a specific objective, such as producing goods or providing services.

Cost sheet is a financial document that provides a detailed breakdown of all costs incurred in the production of goods or services, showing both direct and indirect costs.

Quotation is a formal statement expressing the estimated cost for goods or services provided by a seller to a potential buyer.

13.9 EXERCISE QUESTIONS

Short Questions

Q.1. Define abnormal costs.

Q.2. Define semi-variable costs.

Long Questions

Q. 1. What are the elements of cost? How are they further analysed?

Q. 2. Distinguish between direct and indirect costs.

Q. 3. What do you mean by controllable costs? Give examples.

Q. 4. What is a cost sheet? What are its objectives and advantages?

Q. 5. How does a production account differ from a cost sheet?

Q. 6. In a factory, 20,000 units of Product A were manufactures in the month of July, 2006. From the following figures obtained from the costing records, prepare a cost sheet showing cost per unit.

	Rs.
Opening Stock of raw material	5,000
Purchases	55,000
Closing Stock	10,000
Direct Wages,	25,000
Factory overheads	40,000

Office and Administration overheads20,000 Q. 7. From the following particulars, Prepare a statement showing total cost and profit:

	Rs.	
Opening stock of raw material	10,000	
Closing stock of raw material		8,000
Opening stock of finished goods	15,250	
Closing stock of finished goods		10,750
Raw material purchased		75,000
Carriage on raw material		1,500
Direct wages		.32,500
Factory Cost		6,000
Office Cost	4,000	
Selling expenses		5,250
Sale of scrap	600	
Branch office expenses		2,400
Warehouse expenses		1,750
Exhibition expenses		1,250

Profit is to be calculated @ 2% on selling price. Unit produced during the period were 10,000.

13.10 AnswersKeys (Self Check Exercise)

(a) Direct costs are expenses directly and easily attributable to a specific product, service, or cost object. Examples include direct materials and direct labor.

(b) On the basis of Function costs are classified into 3 categories;

i. Factory Overheads

ii. Office and Administration Overheads

iii. Selling and Distribution Overheads

(c) False (d) False (e) True

Lesson No. 14 _____ **Author: Dr. J.S, Pasricha**

MATERIAL CONTROL

OBJECTIVES

The following objectives are covered under this lesson

1. To study the need and essentials of material control system.
2. To study the various types of purchasing and process of purchasing materials.
3. To study the codification system of material.

14.1 INTRODUCTION

Material is the basic substance used in the process of Production. The cost of material has been defined as "The cost of commodities supplied to an undertaking.' It includes raw materials, spare parts and components, factory supplies and packing materials. It may be direct or indirect. Direct and Indirect materials are distinguished on the basis of identification or traceability of an item of material to the cost unit or cost centre. Oil, grease, cotton waste, etc. are those items of materials that cannot be traced to the finished product.

14.2 MATERIAL CONTROL

The material being the biggest cost factor, affords a wide scope for saving in costs. Therefore a costing system has to provide for a proper control over material and stores.

Material control is defined as "a systematic control over purchasing, storing and consumption to materials so as to maintain a regular and timely supply of materials, at the same time, avoiding overstocking.' It can be achieved by systematically organising and standardising the procedures and activities relating to:

(1) Purchase
(2) Receipt and inspection
(3) Storing
(4) Issuing and
(5) Record keeping

14.2.1 Needs of Material Control

Material control aims at achieving saving in material cost, improvement in material handling, increased production and larger profits. It ensures:

1. Timely availability of right of material resulting in smooth and continuous flow of production.
2. Purchases of stores appropriate quality at reasonable price.
3. Minimum capital investment in the inventory by fixing stock levels and avoiding over stocking.
4. Economy in buying and holding expenses by evolving an ideal order quantity for each item. ."
5. Prevention of leakage, deterioration, wastage of materials by arranging suitable storage facilities and by fixing allowable limits of such losses in storing as well as manufacturing.
6. Minimisation of risk due to spoilage, obsolescence, theft pilferage by enforcing stock control measures and physical verification of stock.
7. Maintenance of appropriate stock records which furnish the data relating to stores quickly and accurately.

14.2.2 Objectives of Material Control

The various objectives may be enumerated as follow:

(a) Procurement of materials and stores from suppliers at the lowest price, consistent with the standard specification as to quality and timely delivery;
(b) Avoidance of production hold-up for want of materials;
(c) Maintenance of even flow of control;
(d) Prevention of excessive investment in material stock;
(e) Avoidance of losses occasioned by deterioration due to evaporation, drayage, careless handling of materials and supplies, pilferage, obsolescence etc.; and
(f) Making available, accurate and reliable information about the different items of materials and stores for proper planning and control.

14.2.3 Essentials of Material Control

Material control embraces all aspects of material management viz. buying, receiving and inspecting, storing, consumption and accounting. It should be organized keeping in mind the following requirements.

1. There should be co-operation and co-ordination among the departments dealing with materials viz, purchase, receiving, inspection, production planning and control departments (drawing office), stores and shops.
2. All items in the stores should be codified.
3. All purchases must be centralised and must be made through an expert purchase manager.
4. Receiving and inspection procedure should be chalked out. Material not ordered or not in accordance with the specification should be rejected.
5. Standard forms for requisitions, purchase order, issues and for transfer of material from one job to other job, should be used.
6. The storage of material should be well-planned to avoid losses from theft, carelessness, damage, deterioration, evaporation and pilferage.

7. Procedures for issue and transfer are to be standardised and applied
8. Minimum, maximum and re-ordering levels for each type of material should be fixed to ensure that there is no shortage of material and that there is no overstocking.
9. Ordering quantity for each type of material should be fixed to reduce :he ordering cost and carrying cost of materials.
10. Adequate records to control materials during production should be maintained to ensure that there is minimum possible wastage.
11. Stores control measures like ABC analysis, perpetual inventory system, stock verification etc. should be introduced.
12. Communication system should be geared to facilitate quick and prompt reporting in printed forms of the data concerning inventory transaction.
13. A system of internal check should be introduced to ensure that all transactions involving materials are checked by authorised and independent persons.

14.3 PURCHASING OF MATERIAL

Effective material control demands a good deal of attention to be paid to activities and procedures relating to purchasing of materials as it has considerable influence on cost, quality of the product, prompt delivery, volume of production and efficiency of manufacture. Efficient buying procedure enhances competitive strength of business through reduction in material order, in cost of storage and buying and also through reduced wastage. It builds up goodwill because of better quality output and timely delivery.

Thus, if the size of business concern permits there should be a separate purchasing department and the responsibility for purchasing all types of materials should be entrusted to this department. The head of this department is usually known as the 'Purchase manager'.

14.3.1 Centeralised Purchasing

For efficient buying a Centralised Purchase Department should be established under an expert officer for purchasing all the requirements of a undertaking. Centralised purchasing:

1. Ensures better controlled purchases and benefits of expert knowledge of the Buyer (i.e. Purchase Manager).
2. Avoids excessive and reckless buying by several persons.
3. Enables buying in bulk to obtain trade discount, concession on packing and transport charges, regular supply and favourable treatment from the suppliers.
4. Eliminates possibility of overstocking and locking up of capital in the stock, of materials. On the other hand, limitation of centralised purchasing are :
   (a) Delay in getting materials;
   (b) High cost of maintaining a central purchase department;
   (c) Chances of wrong purchases owing to lack of proper co-ordination and communication between purchase department and requisitioning department; and
   (d) Inability in taking advantages of local buying by branches;

Local buying by branches have certain merits, viz, quick delivery, contacts with local sellers, saving in transportation, octroi and insurance expenses. But it may lead to reckless buying by, several persons, overstocking, more capital blocked in inventory, loss of economies of large-scale buying and week control over purchasing function. However, where

purchasing quantity is small and/or urgent and immediate supply of materials is needed, local buying may advantageously be resorted to.

Thus, it is evident that centralised purchasing is advantageous. But if the industrial undertaking consists of a number of works or plants which are situated for apart, centralised purchasing may be inconvenient and in such a case, local or decentralised purchasing should be allowed if materials and supplies are required urgently or better terms can be secured from local supplies or the purchases involved are of small value.

14.3.2 Purchasing Procedure

The sole function of the purchase department is "to buy and supply the material and stores, required for various departments (including tools equipment and stationeries) of right quality, in right quantity, at right time and at right price*. This responsibility involves the determination of what to buy, time, quantity, price of buying and supplier from whom purchases are to be made.

To carry out this responsibility, the purchasing department follows the procedures outlined 1 below:

(1) Determination of Purchase Budget.
(2) Receiving the purchase requisition.
(3) Determination of quantity to be purchased.
(4) Exploring the sources of supply and choosing the suppliers.
(5) Placing orders.
(6) Receiving and Inspecting Materials.
(7) Checking and Passing of Bills for Payment.
(8) Return of Materials to suppliers.

(1) Determination of Purchase Budget

Generally, purchase manager, with the help of production planning department, prepare a purchase budget in the beginning of the year. This budget guides him in knowing what he has to buy, what should be the quality, size and quantity and also when he has to buy.

Apart from budget, the Bill of Materials (also called as specification of Materials) prepared by drawing office is also helpful in knowing the requirements of the company for which the purchase manager has to buy.

(2) Receiving Purchase Requisition

Purchase of material is initiated through purchase requisition. Guided by stock position, the storekeeper usually initiates 'Purchase Requisition* (i.e. indent) for materials required to replenish the stock of an item. These are 'regular' purchase requisitions. In case special items are required for a job, departmental head may send a special (also called as occasional) purchase requisition.

A purchase requisition is a formal request to buy materials. It is usually a printed form with columns meant for description, quantity, size and grade of materials required. It must be authorised by a responsible officer like works manager, departmental head or storekeeper. It is prepared in three copies, for routing to:

(i) The Purchase Department
(ii) Production control department, and
(iii) For retaining one for record.

Specimen of Purchase Requisition

Date of which Material is required

Date . Regular No. Occasional

To be filled by Requisition				For Purchase deptt. use	
Sr. No.	Description	Code No.	Qty.	Purchase Supplier Remarks	Order No.

Sd.	Sd.	Sd.
Requisitioner	Approved by	Purchase Manager

(3) Determination of Quantity

Now the buyer; has to determine the quantity of purchase. Larger order has the merits of obtaining more trade discounts, less ordering cost, economy in packaging and transport expenses, credit facilities, regular supply and other concessions from the suppliers. But it involves more capital, increased storage space and expenses, possibility of loss due to obsolescence and price fall etc. The merits and demerits are reverse in case of small order quantity. Therefore, considering both aspects, an ideal quantity of buying is determined which is known as “ordering quantity*.

(4) Exploring the Sources of Supply and Choosing the Suppler

A source of supply material must be selected after the receipt of the purchase requisition. The purchase department usually maintains for every group of materials a list of the supplier's names and addresses. Quotations may be invited from these suppliers by issuing tenders to them. On receipt of the quotations form the suppliers, a comparative statement of various quotations received should be prepared and the desirable suppliers should be selected.

While selection the supplier to whom order is to be given for the purchase of materials, the purchase department should keep in mind: (i) manufacturing capacities, (ii) reliability of the supplier, (iii) financial condition of the supplier, (iv) the management of the supplier firm,
(v) price quotes, (vi) quantity for which price quoted is applicable, (vii) terms of payment, (viii) terms of delivery, and (ix) specification to which the products are manufactured. All the other factors being the same, the purchase price should be the lowest price at which a particular material is to be purchased. Thus, the supplier from whom material is purchased should be dependable and capable of supplying materials of uniform quality at right time at reasonable price. The purchase officer should keep in mind all the criteria given above in making a choice of supplier.

The Purchase Manager will obtain necessary information form, schedule of quotations, past records, catalogues, buyers, guides and other books.

There should be periodic evaluation of suppliers and those whose performance is found to be bad in regard to quality delivery time, sales policies and competitive prices, should be removed from the list of suppliers. In future quotations should not be invited from suchsuppliers till their performance is found good.

(5) Placing an Order

After choosing the supplier, the purchase department, prepares a purchase order for the supply of stores. The order is the written authorisation to the supplier tc supply the particular material or materials. It is the evidence of the contract between the buyer and the supplier that binds both the buyers and suppliers to the terms under which the order is placed. Moreover, it is the document which gives authority to the receiving department to receive the materials ordered for and to the accounts department to accept the bill from the supplier for payment.

The number of copies of the purchase order to be prepared varied from organisation to organisation.

(a) The original copy is sent to the supplier.

(b) One copy is sent to the receiving department.

(c) One copy is sent to the person who initiated the purchase requisition.

(d) One copy is sent to the accounting department.

(e) The last copy is retained by the purchase department for further reference.

A purchase form of the purchase order is given as below:

Purchase Order

No ..... Dated ..... Purchase Requisition No.

To (Suppliers)

Your quotation number ..... dated .....has been accepted.

Please supply the following items of store in accordance with the instructions mentioned therein and terms and conditions listed on the reserve of this purchase order.

Serial No. Description Quality Rate Total Cost Delivery Remarks Date

Terms of Delivery

Terms of Payment

Packing and Dispatch instructions

Discount Allowed

There should be a regular follow-up of the purchase order placed so that materials may be received in time. Enquiries should be made at regular intervals at the delivery date agreed upon. Suitable remedial measures may be taken or alternative sources of supply may be tapped if they face any difficulty in supplying the materials at the promised delivery dates.

(6) Receiving and Inspecting Materials

In small and medium sized manufacturing concerns, function of receipt and inspection of materials arc to be performed by the stores department. But in case of large manufacturing concerns, generally a separate Receiving Department is set up. The main functions of Receiving Department are to receive the materials, to check for their quality and quantity and to arrange movements of materials with in the factory. In case of large

manufacturing concerns, sometimes specialised staff is attached to the Receiving Department for testing the quality of materials. The Receiving Department, after receiving the materials, will prepare a Goods Received Note.

Specimen of Goods Received Note

G.R. Note No ..... Date ..... Inspection Report No: .....

Purchase Order No ..... Date..... Deliver Note No..... Date .....
Received form..... goods mentioned as under :

Sr.No.	Code No.	Description	Qty.	Price	Amount	Remarks

Sd. Sd. Sd. Sd..'

Received by _____ Checked by _____ Storekeeper _____ Store Ledger Clerk _____

(7) Checking and Passing of Bills for Payment

When the invoices received from the supplier, it is sent to the stores accounting section to check both the authenticity, as well as the arithmetical accuracy. The quantity and price mentioned in the invoice are checked with reference to stores received note and the purchase order respectively. The arithmetical accuracy of the invoice is also checked and verified. Having thus verified all respects of the invoice, the stores accounting section certifies and passes the invoice for payment and on this basis, the cashier can make the payment.

(8) Return of Materials to Suppliers

If the goods received are not according to the standard or are in excess of the quantity ordered, they are to be returned to the supplier. In such as case a Debit Note is prepared in quadruplicate. The copies are to be sent to the supplier, Accountant and Purchasing Department respectively, the fourth copy is retained by the receiving Department for future reference.

14.3.3 Just-In-Time Purchasing

'Just-in-time' is said to be the managerial philosophy of elimination of waste. It is directed towards production or procurement of products or components as they are required by the customer or for use rather than for stock. It seeks to eliminate inventory holding costs.

Official Terminology defines Just-in-time purchasing as, "a purchasing system in which material purchases are contracted so that the receipt and usage of material, to the maximum extent possible, coincide."

Thus, under this system, receipt and usage i.e. supply and demand for every item of material are made to coincide. Necessary arrangements are made with limited number of suppliers by entering into long-term contracts for the supply of materials as and when required. Stocks of materials are thus avoided.

Self check Questions

(a) What do you mean by material control?

(b) What is centralized purchasing?

14.4. CODIFICATION OF MATERIALS

Codification means assigning a code, symbol or alphabet or a number to, different materials for each identification, e.g. 6" steel screw may be codified as "SS6" and Brass screw of 3" may be denoted as "BS3".

In giving 'codes' the materials, their nature, quality, size, weight, measurement should be borne in mind. A good code system should be simple, definite, elastic and easy to memorise.

14.4.1 Benefits of Codification

Following are the benefits of Codification:

(i) Easy identification of material.
(ii) Elimination of chances of wrong issue of materials.
(iii) Saving of time in material handling.
(iv) Secrecy of materials used.
(v) Facility of preparation of "Bill of Materials', "Materials Requisitions' and "Purchase Requisitions'.
(vi) Brevity and comprehensiveness in stores list.
(vii) Essential for Merchandised Accounting.

14.4.2 Methods of Codification

1. Alphabetical Method: An alphabet is used to identify a particular material for instance 'A' for coal. 'B' for belts etc. The method is simple but lacks flexibility and expansion. The combination of two or more alphabets may be used to lend flexibility to some extent.
3. Mnemonic Method: This method is an improvement over simple alphabetical method. Here, the material is given that alphabet which indicates the first sound of its name, e.g. copper wire may be coded as CW. It is called a mnemonic system as it assists memory in remembering code words.
4. Numerical Method: Under numerical method a number is assigned to each item. The numbering may be straight or in blocks. Straight numbering means giving separate number to each item, whereas under the latter method a particular class of items is given in block numbers e.g.

Straight Numbering			Block Numbering		
		Code	Steel Nuts	Nos.	1-10
Steel Nuts	1/2	01	-do-	1/2 cm	01
-do-	3/4	02	-do-	3/4 cm	02
-do-	1 cm	03	-do-	1 cm	03
-do	1.5 cm	04	-do-	1.5 cm	04
Brass Nuts	1/2 cm	05	Brass Nuts	Nos.	11-20
-do-	1 cm	06	-do-	1/2 cm	11
-do-	1.5 cm	07	-do-	1.5 cm	12

Now a days, a variation in this method, viz, decimal system has gained more popularity especially on account of its flexibility. An item is given full number, its grade, colour, size etc. are indicated by decimal figures. Suppose an automobile concern uses two types of screw and it has given the following code numbers:

Screw-94, brass-3, Steel-5, and sizes 1/2 Cm as 12, 1/3 cm as 13, 1/4 Cm as 14, 3/8 as 38 on. Now the coding of the following item will appear as under:

	Code
Screw of brass 1/2 cm	94.312
Screw of brass 1/3 cm	94.313
Screw of steel 3/8 cm	94.538
Screw of steel 1/4 cm	94.514

The numerical method is also simple, capable of expansion to pay limit. It does not create confusion in identification but as code number cannot be remembered, an elaborate index is necessary.

Alphabetical-cum-Numerical Method

Under this method, the principal underlines in both the above methods have been combined advantageously for the coding e.g. aluminium wire of 1/2 cm. May be coded as AW 12.

Self Check Questions

(c) Name any two methods of Codification.

(d) What is Mnemonic method of codification?

14.5 CONCLUSION

With a view of promoting specialisation consequent upon division of labour, material control is organised, in modern times. By the creation of a number of departments, each department comes under a separate functional head, to perform each function of material control independently. The framework of material control is known as organisation of material control. This framework consists of interrelated functions in connection with materials and supplies. These functions involved in material control are coordinated in such a way as to achieve the objectives of material control.

14.6 KEYWORDS

Material codification is the systematic assignment of codes to different types of materials for efficient inventory management and control in an organization.

Purchase budget is a financial plan outlining the estimated expenses and quantities of goods or services that an organization intends to acquire during a specific period, typically detailing costs and quantities for each item.

Centralizing refers to the process of consolidating or bringing together various functions, activities, or decision-making authority within an organization into a central location or under a central authority.

Inventory- Raw, semi-finished or finished stock.
Codification of material - Assigning a code, symbol or number.
JIT - Just in time purchasing.
Mnemonic method - one method of codification.
Purchase requisition - A formal request to buy materials.

14.7 EXERCISE QUESTIONS

Short Questions

Q.1 Explain benefits of material codification.
Q.2 What is Alphabetical method of codification?

Long Questions

Q.1 Give the meaning of term “material control." What are its objectives?
Q.2 Briefly explain the procedure-followed for the purchase of materials.
Q.3 What is meant by Just-in-time Purchasing?
Q.4 Describe the various benefits and methods of codification of material.

14.8 ANSWER KEYS (Self check Questions)

(a) Material control involves managing and regulating the acquisition, usage, and storage of materials in an organization to ensure efficient production and cost-effectiveness.
(b) Centralized purchasing is a procurement strategy where an organization consolidates its purchasing activities under a single department or authority, typically at the corporate or central level, to achieve economies of scale and better control over procurement processes.
(c) Alphabetical Method and Numerical Method
(d) Mnemonic Method is an improvement over simple alphabetical method. Here, the material is given that alphabet which indicates the first sound of its name, e.g. copper wire may be coded as CW.

Lesson No. 15 _____ Author: Dr. J.S. Pasricha

INVENTORY CONTROL AND EVALUATION

OBJECTIVES

The objective of the lesson is to give an idea about:

1. Methods of Inventory Control;
2. Methods of valuation of material; and
3. Methods to Control the waste, scrap, defectives and spoilage.

STRUCTURE

15.1 INTRODUCTION

Another department charged with the function of material control is the stores department. Materials are received into the stores department after inspection. This is held by the stores department until it is demanded by the user departments. The material cost depends upon not merely the purchase price of materials, but also their issue price. The general principle of valuing purchases is, "all cost of whichever nature incurred up to the point of placing materials and supplies in a condition suitable for issuance from the stock room should comprise the cost value of materials.*

15.2 STANDARD PROCEDURE OF MATERIAL ISSUE

Materials are kept in store so that the storekeeper may issue whenever these are required by the production departments. A standard procedure of material issue from stores should be developed keeping in view the following points :

1. Material should be issued only against authorization (e.g. Material Requisition)
2. Issuing of material should take the least possible time so that there should not be inconvenience or interruption in production process.
3. Material should be kept at accessible and definite place to enable quick issue.
4. Proper system of classification of materials should be adopted for avoiding the

issue of wrong materials.

5. Persons who come to take innierials should not be allowed to while av/ay the time under lame excuses.
6. Every issue should be recorded immediately in proper records like Bin Card, Stock Register.
7. Material issued should be priced and entered into the Stores Ledger by Costing Department and not by stores personnel.
8. Unauthorised persons should not be allowed to deal with the stocks.

15.3 METHODS OF INVENTORY CONTROL

The cost of material is the most important element of the cost., So it is necessary an effective physical control is exercised over the materials lying in stores in order *to* avoid loss of materials by theft, pilferage etc.

A few methods are available for this purpose which are as follows :

15.3.1 ABC Method

ABC analysis is a technique followed for the purpose of exercising control cn materials according to their value. Under this method all items of materials are classified into three categories A, B and C according to their value.

I. Category 'A* consists of material which constitute 5% to 10% of the total items in the store and represent 70%, to 85%, of total store value;

II. Category 'B' the item constituting 10% to 20% of the total items and 10% to 20% of the store value;

III. Category *lC** the items constituting 70% to 85% of the total items and representing 5% to 10% of the store value.

Items under Category 'A' must be closely controlled by all steps, while in respect of items under category 'C' elaborate control procedures are not necessary. ABC analysis of materials is also known as Always Better control Method or Proportional Parts Value.

Advantages of ABC Analysis

1. It ensures closer control over costly items in which considerable amount of capital is locked up.
2. It leads to reduction in carrying costs.
3. It enables to keep enough safety stock for 'C' items.
4. It enables to maintain high stock turnover rate.

15.3.2 Perpetual Inventory System

The Institute of Cost and Management Accounting London, has defined the perpetual inventory system as "a system of records maintained by the controlling department, which reflects the physical movement of stocks and their current balance."

In simple, it involves (a) maintenance of Bin Card and Stores Ledger which shows goods received, issued and stock in hand at any time; (b) continuous stock taking to compare the actual stock with stock shown by Bin Card and Stores Ledger.

Under continuous stock taking system, a permanent stock taking team is appointed. This team daily verifies the physical stock of different items selected at random. The differences found between the Actual Stock and Bin Card balance are noted and an enquiry for finding out causes is made.

Adjustment of differences between Book Stock and Actual Stock:

If the discrepancy is due to clerical error, the Bin Card or Stores Ledger are adjusted to rectify the mistake. But the difference, especially shortage of actual stock, may be due to several reasons, the reasons may be divided into two categories;

(1) Avoidable (2) Unavoidable

Avoidable Causes

1. Pilferage, theft.
2. Misplacement of materials.
3. Careless materials handling.
4. Short or excess issue due to negligence or wrong measures.

Unavoidable Causes

1. Evaporation,-shrinkage.
2. Deterioration of perishable items.
3. Variation in weight, length due to climatic conditions.
4. Loss in weight and quantity due to seasoning, curing and storing.
5. Loss in bulk breaking (i.e. issuing in small quantities of materials brought in bulk).

Advantages of Perpetual Inventory 8ystem:

1. This system ensures a detailed and reliable checking of stores items in a methodical manner without interfering in any way with the routine work of the factor/.
2. It obviates the necessity of physical stock taking at the end of financial year.
3. It assists in the detection and immediate rectification of clerical errors in the stock records.
4. In case of serious discrepancies, it gives rise to thorough investigation into their causes and prevents the reoccurrence of similar irregularities.
5. It facilitates preparation of periodic Profit & Loss A/c and the balance Sheet.
6. Perpetual checking by surprise prevents employees from playing mischief with stores materials.
7. Stock level can be revised from time to time to avoid or overstocking of a material.
8. It facilitates proper planning of production programmes, framing buying policies, accepting new order etc., as ready information of stock position is available.

Drawbacks of Perpetual Inventory System:

1. The system is expensive and a small concern cannot adopt it.
2. The information about actual stock of a particular day may not be available. Only book figures are available.

15.3.3 Inventory Turnover Ratio (Material Turnover Ratio)

Inventory turnover ratio is also one method of exercising material control. It is the ratio which the value of materials consumed during a period bears to the average stock held during that period. It can be calculated as under:

$$\text{Inventory Turnover Ratio} = \frac{\text{Value of Materials consumed during the period}}{\text{Value of Average Stock held during the period}}$$

Average stock is the half of the total of opening and closing stock. The material turnover can also be expressed in terms of day by formula:

$$\text{Material Turnover in days} = \frac{\text{Days during the period}}{\text{Material Turnover Ratio}}$$

The objective of Inventory Turnover Ratio is to ascertain the speed of movement of particular item. A high ratio indicates that the item is fast moving and investment in it is minimum. A lower ratio denotes that the item is not consumed in more quantity it is going out 0 demand and had led to overstocking. Such slow moving materials should be disposed off as early as possible.

Of course, this rule cannot be applied to machinery spare parts, which are stored for repairing machinery and equipment. In this case, lower rate of turnover would indicate efficiency of machinery and equipment.

Self Check Questions

(a) What is Bin Card?

(b) What is Inventory Turnover Ratio?

15.4 VALUATION OF MATERIAL (PRICING OF MATERIAL)

Material issued to production has to be valued in Costing Department for the purpose of accounting. This is known as material pricing. Pricing becomes a little difficult because of different prices at which material might have been purchased in a particular period.

There are different methods for pricing of material value. The method to be used in a particular manufacturing concern depends upon the nature of materials and the nature of business itself. A very careful choice has to be made to the methods of valuing the material issues because it influences the cost of the jobs and the value of the closing balances of material in the stores. It is important to note

Cost Price Method

1. FIFO
2. LIFO
3. HIFO
4. NIFO

1. First-in-First-out Method (FIFO)

Under this method it is assumed, that issue of materials have been made out of the earliest consignment on hand. The issues of materials therefore, are charged out at the price as was paid for the lot out of which the issues have been made. In other words in this case items on the debit side of stores account (receipts column) are exhausted in chronological order.

Merits: This method has following merits:

(a) Since it is an actual cost method, it recovers entire material cost from production without any over or under recovery.
(b) It appears logical as the material bought earlier is used for earlier jobs.
(c) Stock is valued at recent purchase prices, and hence it closely represents current market price.
(d) This method is useful where the item are bulky, slow moving and costly, because it is easy to identity units belonging to a particular purchase lot.

Demerits:

(a) Calculation becomes complicated when prices fluctuate.
(b) During the period of price fluctuation material cost charges to job vary, therefore comparison between jobs becomes difficult.
(c) When prices decline, jobs (production) are charged at earlier higher prices, with the result that quotations are less competitive, stocks are understated and profit margin in reduced.

(d) When prices start rising, profits are inflated creating income tax difficulties. This method is most suitable in times of falling prices because the issue price of materials to jobs or work orders will be high (materials issued from the earliest consignments which were purchased at a higher rate) while the cost of replacement of materials will be low.

Example:

Prepare a stores ledger account for materials *X* showing the issue of material on FIFO method of valuation for April, 2006 from the information below:

April 2006		Quantity	Rate Per Unit
1st	Opening balance	500 units	Rs. 20
8th	Issues	300 units	
16th	Purchases	800 units	Rs. 22
18th	Issues	400 units	
25th	Issues	300 units	
26th	Purchases	400 units	Rs. 25
28th	Issues	600 units	

Stores Ledger

Date	Receipts				Issues				Balance			Remarks
2006	Ref	Qty. Units	Rate Rs.	•Amt. Rs.	Ref.	Qty. Units	Rate Rs.	Amt. Rs.	Qty. Units	Rate Rs.	Amt. Rs.	
April 1									500	20	10,000	
8						300	20	6000	200	20	4,000	
16		800	22	17600					200	20	' 4,000	
									800	22	17,600	
18						200	20	4000				
						200	22	4000	600	22	13.2C0	
25						300	22	6000	300	22	6,600	
26		400	25	10,000					300	22	6,600	
									400	25	10,000	
28						300	22	6,600				
						300	25	7,500	100	25	2,500	

2. Last-in-first-out method (LIFO)

Under this method, it is assumed that issues of materials have been made out of the latest consignment or latest purchases. Materials are issued at cost and the price of the latest consignment is used for pricing the materials issued.

Merits:

1. Since materials are charged at recent price, cost of production reflects current market trend, and the quotation prices are competitive.
2. Being an actual cost method, it ensures complete recovery of material and cost from production.

Demerits:

1. Like FIFO, this method may lead to clerical errors as every time an issue is made, the store ledger clerk will have to go through this record to ascertain the price to be charged.
2. Like FIFO, comparison between one job and the other job will become difficult.

3. For pricing a single requisition, more than one price has often to be adopted.
4. The stock in hand is valued at price which does not reflect current market price.
5. The method is suitable in time of rising prices because materials are issued at the current market prices which are high.

Using the same example given under FIFO method, the position or stores ledger under LIFO method shall be as follows:

Solution:

Store Ledger

Date	Receipts				Issues				Balance			Remarks
2006	Ref	Qty-Units	Rate • Rs.	Amt. Rs.	Ref.	Qty. Units	Rate Rs.	Amt. Rs.	Qty. Units	Rate Rs.	Amt. Rs.	
April 1									500	20	10,000	
8						300	20	6000	200	20	4,00C	
16		800	22	17600					200 800	20 22	4,000 17,600	
18						400	22	8,800	200 400	20 22	4.000 8.000	
25						300	22	6,600	200 100	20 22	4,000 2,200	
26		400	25	10,000					200 100 400	20 22 25	4.0 2, 200 10.000	
28						400 100 100	25 22 20	10,000 2,200 2000	100	20	2,000	

3. Highest-in-First-out Method (HIFO)

Under this, method, issues are priced at the highest value of the available consignment in the store. The main object of this method is to ensure that stock values are kept at lowest possible level but this method has not been adopted widely.

This method is based on the assumption that the closing stock of materials should always remain at the minimum value so that the issues are priced at the highest value of the available stock in the store. This method is not popular as it always undervalues the stock which amounts to creating a secret reserve. The method is mainly used in case of cost plus contracts or monopoly products as it is helpful in increasing the price of the contract of products.

4. Next-in-First-out Method (NIFO)

Under this, method, issues are made at the next price i.e., the price of material which has been ordered but not yet been received. In other words, issues of material are priced at the latest price at which the company has been committed, even though the materials have not yet been actually received. The main objective of this method is to value issues at an actual price which is as close as possible to the market price but this method has not been adopted widely.

This method is based on the assumption that the closing stock of the materials should always remain at the minimum value, so that the issues are priced at the highest value, of the available consignments in the store. The method is not popular as it always under values the stock which amounts to create secret reserve. The method is mainly used in case of cost plus contracts or monopoly products as it is helpful in increasing the price of the contract or products.

15.4.2 Average Price Methods

1. Simple average price method
2. Weighted average price method

All average cost methods claim certain common merits over actual cost methods viz. easy in calculation, smoothening effect of price fluctuations and better comparison between jobs. Main demerit of those methods is that materials are charged to the jobs at an average price which is not actual cost of purchase of materials. This results in over or under recovery of materials cost from production.

Different methods of average cost valuation have been explained below:

1. Simple Average Price Method

The price under this method is calculated by dividing the total of prices of materials in the stock from which materials are issued, by the number of prices entering in the calculation. For the purpose of calculation the issues are presumed to have been done in chronological order and quantities of purchase are ignored.

It is simple to operate and gives good results when prices are stable. But it leads to profit or loss due over or under charging of material cost to production. Moreover, the valuation of closing stock is not stock.

Example: From the following transactions recorded in respect of materials 'X* used in factory, prepare stores ledger by pricing the issues at simple average method.

April 2006		Quantity	Rate Per Unit
3rd	Purchases	400 units	Rs. 2.10
15th	Purchases	500 units	Rs. 2.20
20th	Issues	500 units	
26th	Purchase	600 units	
28th	Issues	900 units	

(a) Simple Average Method

Stores Ledger

	Receipts				Issues				Balance			Remarks
	Ref	Qty. Units	Rate Rs.	Amt. Rs.	Ref.	Qty. Units	Rate Rs.	Amt. Rs.	Qty. Units	Rate Rs.	Amt. Rs.	
1 3 15 20		400	2.10	840		500	2.15	1,075	400	2.10	840	
26 28		500	2.20	1,100					900		1,940	
						900	2.35	2,115	400		865	
		600	2.50	1,500					1000		2,365	
									100		250	

Note: Calculation of average price

I. 15th April : il:(- Rs.2.10 + Rs.215

II. 26th April U:(- Rs.220 + Rs.2.50 Rs.2.35

2. Weighted Average Price

This method considers quantity of materials stock for calculating the issue price. Whenever fresh supply is received, the price is calculated by dividing total cost of stock (including fresh supply) by quantity in stock.

$$\text{Weighted Average Price} = \frac{\text{Total Cost of Stock}}{\text{Quantity in Stock}}$$

The stores ledger under Weighted Average Price Method for the previous example would be as follows:

Solution:

Weighted Average Price Method

Stores Ledger

	Receipts					Issues			Balance			Remarks
	Ref	Qty. Units	Rate Rs.	Amt. Rs.	Ref.	Qty. Units	Rate Rs.	Amt. Rs.	Qty. Units	Rate Rs.	Amt. Rs.	
3 15 20		400	2.10	840		500	2.16	1,080	400	2.10	840	
26 28		500	2.20	1,100					900	2.16	1,940	
						900	2.36	2,124	400	2.16	860	
		600	2.50	1,500					1,000	2.36	2,360	
									100	2.36	236	

Note: Calculation of Weighted Average Price:

I. 15th April $\frac{400 \times Rs.210 + 500 \times}{400 + 600}$ Rs.216

II. 26th April $\left(\frac{400 \times Rs.216 + 500 \times Rs.250}{400 + 600} \right.$ Rs.236

15.4.3. Notional Price Methods

1. Inflated Price Method
2. Market Price Method
3. Standard Price Method

1. Inflated Price Method

This method is applied where the materials are subject to normal wastage which is unavoidable. In order to cover the loss arising due to normal wastage, the materials issue are priced at an inflated rate. For example, if 100 units of a certain material are purchased at Rs. 38.80 per-unit and it is expected that there shall be a no final wastage of 5 units, 95 units of

the material shall be used at an inflated price of Rs. 40 per unit (Rs. 3800 % 95).
This method is quite specific and reasonable but involves excessive clerical labour.

2. Market Price Method

Under this method, the material issues are priced at market price ruling at the date of issues or at the replacement price. The actual cost of the material is ignored under this method.

This method is suitable for giving quotation and competitive basis. It also indicates the buying efficiency in that the excess of market price charged to the issues over their purchase denotes efficient buying and vice-versa. Not being an actual cost method, it leads to profit or loss in charging materials to production. Moreover, it is not easy to maintain upto date list of revealing market prices.

3. Standard Price Method

Under this method, the material are priced at standard price or fixed price. The standard issue price is fixed for a definite period say for a month, quarter or year after considering all factors affecting prices.

Standard Price can be of two types

I. Basic standard, i.e. fixed for long period to facilitate perspective planning.

II. Current standard, i.e. fixed for. short period, flexible to accommodate the permanent change likely to take place in the cost of materials. This method possesses the advantage of simplicity, as calculations are minimise and is generally used when market fluctuations are few.

15.4.4 Specific Price Method

When materials purchased for specific job or work order, they should be issued to the specific job or work order at their actual cost. This method is used where job costing is in operation and the actual material issued can be identified.

Self Check Questions

(c) What is Notional price?

(d) Explain LIFO.

15.5 PRICING OF RETURNS

Materials returned in the original condition may be valued by anyone of the following two methods:

(I) At the same price at which it was issued

The returned material is valued at the original price at which, it was issued. This price is ascertained from the original material requisition. This method of pricing of returns is most desirable because the values of the credit given on the return and the original debit given on issue to the production order concerned are identifiable and no further adjustment is needed. The returned material may be kept apart and may be issued according to the specific price method at the original price or the returned materials may be treated as a new entry. After treating the returned materials as a new purchase. It will be issued according to the method of pricing of issue prevalent in the organisation.

(II) At the Current Price of Issue

According to this method, the returned material is priced at the rate at which any materials requisition, placed on the date would have been priced. In other words, pricing of returns will not be done at the original price. This method is not popular as it will need

adjustment in production order on account of different rates being applied on returns. Scraps, wastes, defectives, etc. do not possess the same value as the original material. So, these are valued separately and then entered in the Bin Card and Stores Ledger. Thus, pricing of scraps, wastes and defective is made according to their value and credit is given to the production order, which returned siich scraps, wastes and defectives.

15.6 WASTAGE, SCRAP, DEFECTIVE WORK AND SPOILAGE Wastage

"Waste is the portion of a basic raw material lost in processing, having no recovery value*. It is a complete loss. A percentage of normal wastage is standardised for die purpose of exercising control over it and this normal waste may be spread over good units by inflating their cost proportionately. If waste is abnormal, or in excess of fixed limit, the excess amount may be debited to costing Profit and Loss Account.

Scrap

"Scrap is the incidental residue from certain types of manufacture usually of small amount and low value, recoverable without processing.*

Defectives:

"Defectives are that portion of production which may be rectified at an extra expenditure,'

(i) If it is due to inherent defect in production process, and identifiable to a job or process, it may be charged to specific job.

(ii) If it is due to abnormal circumstances it is debited to costing profit and less account. Spoilage :

"Spoilage refers to that portion of production which is damaged beyond rectification and as such can be sold out as 'Second' or Third' quality goods without further processing. The cost of work spoiled as determined by accumulating material, labour and overhead expenses incurred upto the point of rejection.

Self Check Questions

(e) What do you mean by Scrap?

(f) Role of waste management in Costing.

15.7 CONTROL OVER WASTE, SCRAP, SPOILAGE AND DEFECTIVES

Since it is impossible to eliminate waste, scrap, spoilage and defective it is imperative to follow a rigid procedure of control to keep them down. The control procedure should recognise the following essentials.

(a) Setting Standards or Normal Limits

Standards are to be established in respect of scrap, waste, spoilage and defectives having regard to the nature of manufacturing process, quality of raw materials and workmanship and working conditions of plant and equipment.

(b) Reporting

Standard forms printed in different colours are to be used for prompt and accurate reporting. These reports should clearly furnish information such as the name of the department, number of cost centre, date and report number, actual waste, scrap etc., in both quantity and percentage, normal limit, the difference between, the actual and the standard costs calculated, the causes for difference and the action to be taken.

(c) Remedial Action

Where the reports show deviation of actuals from standards, the reasons should be carefully studied and immediate corrective steps must be taken. These steps may be:

(1) To repair the machinery and equipment.

(2) To replace the parts scrapped.

(3) To return the defective materials to suppliers.

15.8KEYWORDS

EOQ (Economic Order Quantity): Optimal order quantity balancing ordering and holding costs.

JIT (Just-In-Time): Minimizing inventory levels by receiving goods as needed for production.

ABC Analysis: Prioritizing inventory items based on importance (A, B, C categories).

Safety Stock: Buffer inventory to prevent stock outs due to demand or supply uncertainties.

Perpetual Inventory System: Real-time updates for accurate and immediate inventory information.

FIFO (First-In-First-Out): Assumes the first items purchased are the first sold.

LIFO (Last-In-First-Out): Assumes the last items purchased are the first sold.

Weighted Average Cost: Average cost of inventory items based on their weights.

Specific Identification: Valuing each item in inventory individually based on its actual cost.

HIFO - Highest value material first out

NIFO - Next in first out method

Blanket rate - A single rate for all non-specific cost put together.

15.9 Self Check Exercise

Short Answer Questions

(a) What role does ABC analysis play in inventory control?

(b) How does the Safety Stock method enhance inventory control?

(c) What is the purpose of implementing a Perpetual Inventory System?

Long Questions

Q.1 On 1st March 2006, there are 1500 units of materials at Rs. 12 per unit in stock. The following transactions were made during the month:

March 2	Issued	200 units	
4	Purchased	1,000 units	@ Rs. 15 p.u.
5	Issued	1,200 units	
6	Purchased	600 units	@ Rs. 20 p.u
7	Issued	650 units	
7	Returned to store form issued of 2 march, 100 units		
9	Purchased	300 units	at Rs. 25 p.u.
13	Issued	250 units	
17	Issued	300 units	

Prepare stores Ledger account by FIFO and LIFO methods.

Q. 2 What is Inventory Control? Give various methods of valuation of inventory in details.

Q. 3 What is meajit by perpetual Inventory System? Describe its advantages and Disadvantages.

Q. 4 Write short notes on

(a) ABC Analysis

(b) Average Stock Level

(c) Treatment of Scrap and Defectives

(d) LIFO Method.

15.10 ANSWER KEYS (Self Check Exercise)

(a) A bin card is a manual or electronic record-keeping tool used in inventory management.
(b) The inventory turnover ratio is a financial metric that measures how many times a company's inventory is sold and replaced over a specific period, usually a year. It is calculated by dividing the cost of goods sold (COGS) by the average inventory for the same period.

(c) Notional value refers to the nominal or face value of a financial instrument or contract, often used to calculate payments or assess the value of an agreement.
(d) Last-In-First-Out, is a method of inventory valuation where the cost of the most recently acquired or produced items is assigned to the cost of goods sold (COGS) first.

(e) "Scrap" refers to materials or products that are considered to be of no further use or value. Scrap can result from various stages of the production process, such as defective products, excess materials, or by-products that cannot be used in the main production line.
(f) Waste management is integral to costing as it directly influences expenses, resource utilization, regulatory compliance, and overall efficiency in the production process.

Lesson No. 16

Author: Inderjit Singh

MARGINAL COSTING AND CVP ANALYSIS

STRUCTURE

16.1 Marginal Costing : Introduction

As we know, there are three elements of cost-material, labour and overheads. These elements of cost can be broadly divided into two categories: Fixed costs and variable costs. Fixed costs are those costs which do not vary but remain constant within a given period of time and range of activity in spite of fluctuations in production. The examples of fixed costs and rent, insurance charges, management salaries etc. On the other hand, variable costs are costs which vary in direct proportions to any change in. the volume of output. The cost of direct materials, direct wages etc. can be put into this category. On account of this, a special technique known as marginal costing has been developed which excludes fixed overheads entirely from cost of production and gives us the same cost per unit up to particular level of output. Thus, under this technique, fixed expenses are not allocated to cost units but are charged against “fund* which arises out of excess of selling price over total variable costs.

16.2 Meaning of Marginal Cost

The certified institute of Management Accountants, England, defines the term 'marginal cost’ as follows:

Marginal cost is 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 this context, a unit may be a single article, a batch of articles, on order, a stage of production capacity or a department. It relates to the change in output in the particular circumstances under consideration.

According to CIMA Terminology Marginal Costing is the ascertainment of marginal costs and of the effect

between fixed costs and variable costs. In this technique of costing, only variable costs are charged to operations, processes or products, leaving all indirect costs to be written off against profits in the period in which they arise.

16.3 Ascertainment of Marginal Cost*

Ascertainment of marginal cost is different from total or absorption cost. In marginal cost it is assumed that the difference between aggregate sales value and the aggregate marginal cost of the output sold provides a fund to meet the fixed cost and profit of the firm. In respect of each product, the difference between its sales value and the marginal cost is known as “contribution* made by the product to this fund. This contribution is the difference between the sale value and the marginal cost of sales and it contribute towards fixed expenses and profit. If more than one product are produced contribution of all products are merged into the fund out of which fixed expenses are deducted to get the feature of the profit.

Marginal Cost - Total Cost - Fixed cost

or

Direct Material Cost + Direct Labour Cost + Other Variable Cost.

16.4 Absorption Costing

Absorption costing is a full cost or total input concept. Here, production units ‘fully absorb’ all manufacturing costs. It is a costing technique under which all manufacturing expenses are charged to product costs. The message is that fixed manufacturing expenses are charged to product costs. The message is that fixed manufacturing expenses are sought to be assigned and recovered directly from the items produced. It is also called 'full costing' or "full absorption costing."

Absorption Cost Equation

The profit equation in absorption costing can be formulated as follows: P - S (R - T)

P - Profit

S - For Sales Volume

R = For Selling Price

• T - For the Full Cost Price

16.5 Difference between Absorption Costing and Marginal Costing

Under absorption costing, full costs are charged to production i.e. all fixed and variable costs are recovered from production while under marginal costing only variable costs are charged to production. Fixed costs are ignored. This is on of the basis that for the additional output only variable costs are incurred since fixed costs remain constant. There is, therefore, no reason to burden the additional output with the share of fixed overheads; otherwise, it will give a wrong idea about the likely profit to be earned on additional sales. Or account of recovery of only variable costs to production the closing stock under marginal costing is valued only at marginal cost. Thus, Marginal costing system differs from absorption costing system in two respects.

1. Recovery of Overheads.
2. Valuation of Stocks.

1. Recovery of Overheads: In case of absorption costing both fixed and variable overheads are charged to production. On the other hand, in Marginal Costing only variable overhead, are charged to production while fixed overheads are transferred in full tc the costing

and profit and loss account. Thus in case of Marginal Costing, there is under recovery overheads since only variable overheads are charged to production. .

2. Valuation of Stocks: In case of Absorption Costing stocks of work-in progress and finished goods are valued at work cost and total cost of production respectively. The works cost of cost of production so used includes the amount of fixed overheads also. In case of Marginal Costing only variable costs are considered while computing the value of work-in- progress or finished goods. Thus closing stock in marginal costing is under valued as compared to Absorption Costing. This also results in carrying over the fixed overheads of one period to the next period.

The following income statement format reveals the basic difference between full and marginal costing income statements:

Full of Absorption Costing	Marginal Costing
Revenue All manufacturing costs, variable and fixed (stated as cost of goods sold)	Revenue -All variable costs, including the variable manufacturing cost of unit sold and all variable non-manufacturing costs.
Gross Profit -All non manufacturing costs, variable and fixed	Contribution to fixed costs -All fixed costs, including manufacturing and non-manufacturing costs.
Income before tax - Provision for tax Net Income	Income before tax - Provision for tax net Income

16.6 Limitations of Absorption Costing Method

Following are the limitations of absorption costing method:

1. Difficulty in comparison and Control of Cost: Absorption costing method is dependent on level of output; so different unit costs are obtained for different levels of output. An increase in the volume of output normally results in reduced unit costs and a reduction in output results in an increased cost per unit due to existence of fixed expenses. This makes comparison and control of cost difficult.

2. Not helpful in managerial decisions: Absorption costing is not very helpful in taking managerial decisions such as selection of suitable product mix, whether to buy or manufacture, whether to accept the export order or not, choice of alternatives, the minimum price to be fixed during the depression, number of units to be sold to earn a desired profit etc. In all such decisions the technique of marginal costing is suitable because it takes into consideration the additional cost involved (i.e. variable expenses) only assuming fixed expenses remaining constant.

3. Control vitiated because of fixed cost: Under absorption costing method, a portion of fixed cost is carried forward to the next period because closing stock is valued at cost of production which is inclusive of fixed cost. In marginal cost technique, it is not so because all fixed expenses of a particular period are deducted from fund for arriving at the figure of profit. So in marginal costing technique, costs pertaining to particular period are not vitiated as in Absorption costing method.

16.7 MARGINAL COSTING AND DIRECT COSTING

Direct costing is the technique where only direct costs are considered while calculating the cost of the product. Indirect costs are met against the total contribution (excess

of selling price over direct costs) given by all the products taken together. Many accountants use 'Direct Costing' and 'Marginal Costing' as synonymous terms. This is unfortunate, because all direct costs need not be variable costs. A direct cost is a cost that can be identified readily with a department, function, a unit of product or some other relevant unit. Direct cost can be fixed as well as variable e.g. if rent paid for a factory building in which only one product is being manufactured, the rent paid will be taken as direct cost but not as variable cost. Thus, cost of the product under direct costing and marginal costing will be different.

Self Check Questions

(a) What is Marginal Costing?

(b) Differentiate Between Marginal Cost and Variable Cost.

(c) What is absorption costing?

16.8 SEGREGATION OF SEMI VARIABLE COSTS

Marginal Costing requires segregation of all costs between two parts fixed and variable. This means tha* the semi-variable cost will have to be segregated into fixed and variable elements. This may be done by anyone of the following methods:

1. Levels of output compared to level of expenses method.
2. Range method.
3. Degree of variability method.
4. Scattergraph method.
5. Least squares method.

1. Levels of output compared to level of expenses method : According to this method, the output at two different levels is compared with corresponding level of expenses. Since the fixed expenses remain constant, the variable overheads are arrived at by the ratio of change in expenses to change in output.

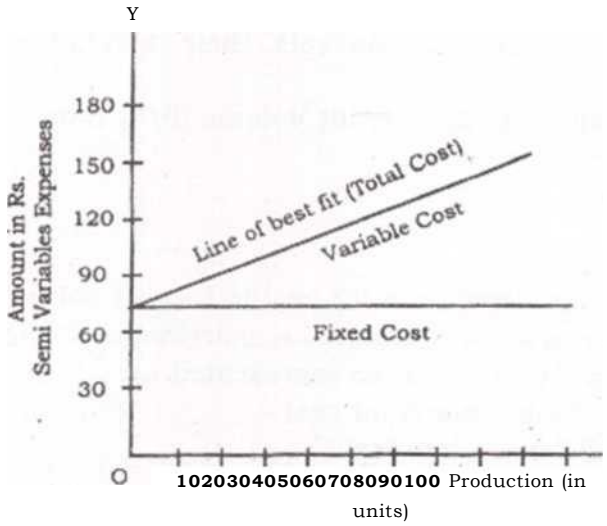
$$\text{Thus variable element} = \frac{\text{Change in amount of expenses}}{\text{Change in activity of quantity}}$$

2. Range Method: This method is similar to the previous method except that only the highest and lowest points of output are considered out of various levels. This method is also designated as 'high and low' method.

3. Degree of variability method: In this method, degree of variability is noted for each item of semi-variable expenses. Some semi-variable items may have 30% variability while others may have 70% variability. The method is easy to apply but difficulty is faced in determining degree of variability.

4. Scattergraph Method: In this method the given data are plotted on a graph and line of best fit is drawn. This method is explained as follows:

1. The volume of production is plotted on the horizontal axis and the costs are plotted on the vertical axis.
2. Costs corresponding to each volume of production are plotted on/the paper. Thus, several points are shown on it.
3. A straight line of best fit is then drawn through the points plotted. This is the total cost line.
4. A line parallel to the horizontal axis is drawn from the point where the line of best fit intersects the vertical axis. This is the fixed cost line. .
5. The variable cost at any level can be known by noting difference between fixed cost and total cost lines.



5. Method of least squares: This method is based on the mathematical technique of fitting an equation with the help of a no of observations. The linear equation i.e. a straight line equation, can be assumed as

Y - a + bX and various sub equations shall be

Y - na + bX

$XY - ax + bX^2$

MARGINAL COST EQUATION

We know sales - variable cost + fixed cost + profit/loss or Sale-variable cost - Fixed cost ± profit/loss or S - V - F+P where 'S' stands for Sale-s, *V* for variable costs, *F' for fixed cost '+ P' for profit or loss or S- V - C because F+P i.e. Fixed Expenses + Profit - Contribution.

The marginal cost equation of S-V * F ± P is very useful to find any of the four factors i.e. S, V or P if three factors of these are known.

16.9 BREAK EVEN (OR COST VOLUME PROFIT) ANALYSIS

Break even analysis is a logical extension of marginal costing. It is based on the same principle classifying the operating expenses into fixed and variables. Now a days it has become a powerful instruments in the hands of policy makers to maximise profits.

There may be change in the level of production due to many reason, such as competition introduction of new product, trade depression or boom, increased demand for the product, scarce resources, change in the selling price of products, etc. In such cases management must study the effect on account of the changing levels of production. A number of techniques can be used as an aid to management in this respect. One such technique is the break even analysis.

The term *break even analysis' is interpreted in the narrower as well as broader sense. Used in the narrow sense, it is concerned with finding out the break even point, i.e. level of activity where the total cost equals total selling price. Used in its broader sense, it means that system of analysis which establishes the relationship of costs, volume and profits; so this analysis is also known as 'Cost Volume Profit Analysis.'

The study of break even analysis can be made by

- 1. Mathematical relationship between costs, volume, profit and
2. Break Even Charts.

In order to understand mathematical relationship between cost, volume and profit, it is desirable to understand the following four concepts, their calculation and applications.

1. Contribution. ,
2. Contribution/ Sales/ (C/S) or Profit Volume (P/V) Ratio.
3. Break Even Point.
4. Margin of Safety.

16.10 CONTRIBUTION

Marginal Costing analysis depends a lot on the idea of contribution. Contribution is the difference between the sale and variable cost i.e. marginal cost and it contributes towards fixed expenses and profit. Contribution can be represented as:

Contribution - Selling Price - marginal cost or

Contribution * Fixed Expenses + Profit or Contribution -

Fixed Expenses = Profit OR Loss

Contribution is different from the profit which is the net gain in activity or the surplus and remains after deducting fixed expenses from the total contribution. In marginal costing, contribution is very important as it helps to find out the profitability of a product, department or division or have better product, mix for profit planning and to maximise the profits of a concern.

16.11 CONTRIBUTION/SALES (C/S) OR PROFIT/VOLUME (P/V) RATIO

When the contribution from sales is expressed as a percentage of sales value, it is known as profit/volume ratio. It expresses relationship between contribution and sales. Better P/V ratio is the index of sound 'financial health' of a company's product. This ratio reflects change in profits due to' change in volume. Broadly speaking, it shows how large the contribution will appear, if it is expressed on equal footing with sales. The statement that P/V Ratio is 40% means that contribution is Rs.40, if size of the sale is Rs. 100. One important characteristic of P/V ratio is that it remains the same at all levels of output. P/V ratio is particularly useful, when it is considered in conjunction with margin of safety. The other term being used to refer to P/V ratio are: a) marginal income ratio, (b) contribution to sales ratio, and (c) variable profit ratio.

$$\text{P/V Ration} = \frac{\text{Contribution}}{\text{Sales}} \text{ or } \frac{\text{Change in contribution or Profits}}{\text{Change in Sales}}$$

A change in fixed cost does not result in change in P/V ratio Since P/V ratio expresses relationship between contribution and sales.

16.11.1 Advantages of P/V Ratio

1. It helps in determining the BEP.
2. It helps in determining profit at various sales level.
3. It helps to find out the sales volume to earn a desired quantum of profits.
4. It helps to determine relative profitability of different products, processes and departments.

16.11.2 Limitations of P/V Ratio

There is a growing trend among companies to use the profit volume ratio in deciding the product-worthy additional sale efforts and productive capacity and host of other managerial exercises. Following are limitations of the use of P/V ratio:

1. P/V ratio heavily leans on excess of revenue over variable cost.
2. The P/V ratio fails to take into consideration the capital outlays required by the additional productive capacity and the additional fixed costs, that are added.
3. Inspection of P/V ratio of products can suggest profitable product line, that might be emphasized but P/V ratio will not help to take final decision. For this purpose, analysis has to be broadened to take into consideration differential cost of decision and opportunity costs, etc. Thus, it indicates the area only that are to be probed.
4. The P/V ratio has been referred to as the questionable device for decision making because it only gives an indication of the relative profitability of the products/products lines : that too: if other things are equal. P/V ratio is good for forming impression and not for making decision.

The above points highlight that P/V ratio should not be used inconsiderately. Its limitations should be alive in the mind of user.

Self Check Questions

(d) Define Contribution.

(e) How Does CVP Analysis Assist in Decision Making?

(f) Discuss a Limitation of Marginal Costing.

16.12 BREAK EVEN POINT

BEP is the point of sale at which company makes neither profit nor loss. The marginal costing technique is based on the idea that difference of sales and variable cost of sales provides for a fund, which is referred to as contribution, contribution provides for fixed cost and profit. At Break even point, contribution is just enough to provide for fixed cost, if actual sales level is above BEP, the company will make profit. If actual sales is below BEP, the company will incur loss. A concern which attains BEP at less number of units will definitely be better from another concern whose BEP is achieved at more units of production.

$$\text{Break Even Point (In units)} = \frac{\text{Total fixed Expenses}}{\text{Contribution Per Unit}}$$

$$\text{Break Even Point (in Rs.)} = \frac{F \times S}{S-V} \text{ or } \frac{F}{P/V \text{ Ratio}}$$

16.13 MARGIN OF SAFETY

Margin of safety represents the difference between sales; at a given activity and sales of BEP. Consequently, it indicates the extent to which a fall in demand could be absorbed before company begins to sustain losses. Margin of safety is expressed as percentage of sales. The wide margin of safety is advantageous for the company. Margin of safety depends on level of fixed cost, rate of contribution and level of sales. The relationship of margin of safety with sales can be expressed as follows:

Sale - Sales at BEP - Margin of Safety Margin of Safety

(M/S) - Profit/P/V Ratio.

The soundness of a business can be measured by margin of safety. This knowledge is very useful in taking policy decision like reduction in price to face the competitors. Margin of safety indicates how much present sales are able to keep business away from the crucial point, where business will earn neither profit nor less.

Improvement in Margin of Safety

The margin of safety can be improved by adopting the following steps:

1. Increase in Sales Volume: It widens the difference between sales at activity level and sales at BEP.
2. Increase in Selling price: If it is not possible to increase sales volume, selling price is increased to improve the margin of safety.
3. Change in product mix there by increasing contributions: This will lead to improvement in margin of safety, because it widens the gap of sales at specified activity level and sales at BEP.
4. Lowering fixed Cost; It increases margin of safety, because Break Even sales go down by lowering fixed cost.
5. Lowering fixed variable overhead: It increases margin of safety by improvement in P/V ratio.

Effect of Price Reduction on P/V ratio, B.E. Point and Margin of Safety

The P/V Ratio gives the relationship between contribution and sales and marks the change in percentage of contribution in relation to change in the volume of sales. When there is reduction in the selling price, it will result in a reduction of contribution (variable cost per unit being constant) and a reduction in the sales volume, thus reducing the P/V ratio.

BEP is that point where total costs are just equal to the sales and there is no profit or loss. When selling price is reduced, the sales volume will also be reduced but total cost remains the same. To match the total costs equal to sales, sales volume has to be increased. Thus, the BEP will rise, i.e. it will be achieved at a higher sales volume.

Margin of safety is the excess of actual sales over the BEP sales volume. With the reduction of price, the sales volume will be reduced, so margin of safety will also be shortened.

Graphic presentation of Cost Volume-profit Relationship

In graphic presentation, a diagram of the relationship among various factors, like cost, volume and profit is presented. This pictorial presentation makes this relationship easy to understand. Following are important charts for portraying this relationship:

1. Break-Even charts.
2. Profit/Volume Charts and
3. Sequential profit graph.

16.14 BREAK-EVEN CHARTS

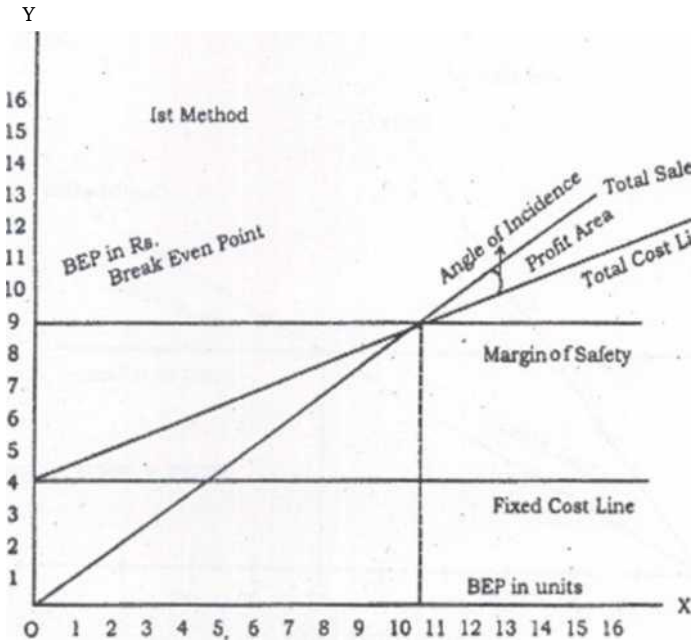
A break even chart is a graphical presentation of marginal costing. Break even chart given an overview of cost-volume-profit relationship. The chart demonstrates more than anything else, importance of fixed cost in the operations of an undertaking. Following are important break even charts:

(a) Simple break-even charts
(b) Elaborate break-even charts
(c) Cash break-even charts
(d) Control break even charts.

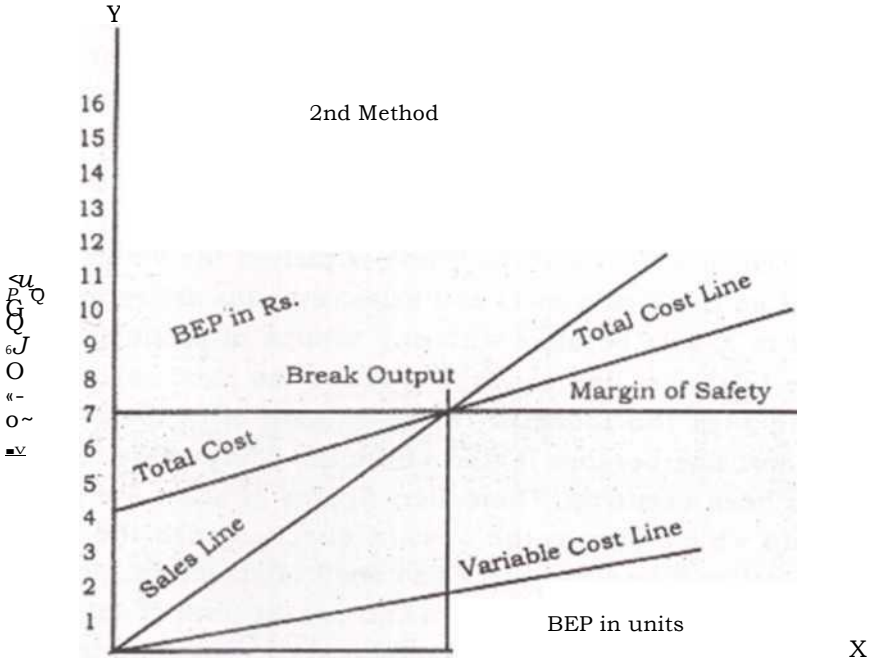
(a) Simple Break-Even Charts : These charts present only the basic relationship of

cost, volume and profit. These charts are easy to understand. They show only the break-even point but also the profit and loss, that may be expected' at different levels of activity. The affect of change in selling price and cost can also be presented by drawing a new set of lines preferably with different colours. Primarily, a simple break-even chart contains three lines- sales line, fixed cost line and total cost lines. It can be prepared by any of following methods:

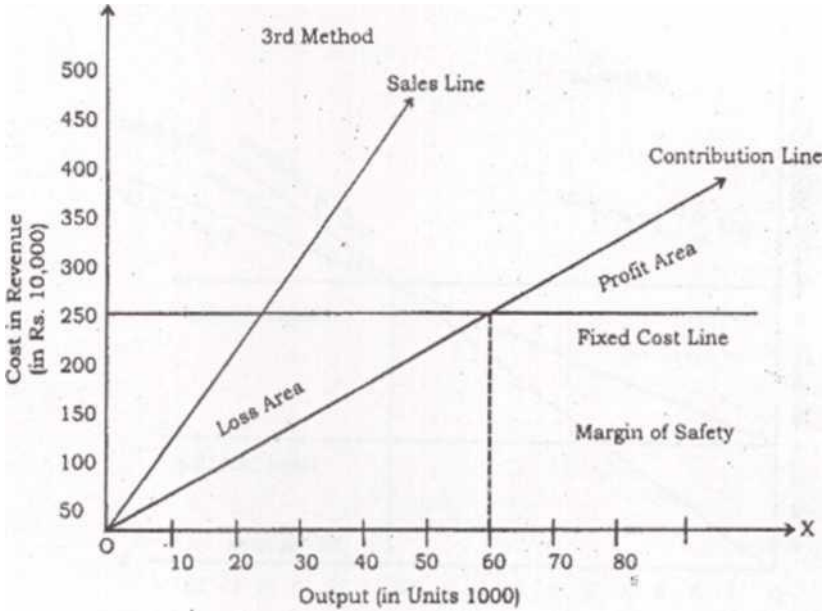
First Method: On the X-axis of the graph is plotted the volume of production or the quantities of sales and on the Y-axis costs and sales revenues are represented. The fixed cost line is drawn parallel to X-axis because with any volume of production the fixed cost shall remain the same. The total cost line is depicted above the fixed cost line, which shows that the cost is increasing with the increase in the volume of output. This line can also be regarded as the total cost line because it starts from the point where variable cost is zero and certain fixed cost has been occurred. Thereafter, figures of sales are plotted from the origin and a line is drawn up which goes in the upward direction with the increase of production sales. The two lines-total cost line and sales line shall intersect each other at one point, and a perpendicular can be drawn from this point to find out the level of output where the business shall be at no-profit no-loss position since the total costs are equal to toted sales revenue here. If the business produces less than this level of output, it shall be running at a loss. The portion of loss is shown by the lower sales lines and upper total costs line. If the business produces more units than the break even level, profits shall result and it shall be higher and higher as the production / sales increases. This is indicated by upper sales line and lower total cost line.



Second Method: Another method of drawing a break even chart is showing the variable cost line first and thereafter drawing the fixed cost line above the variable cost line. Sales line is drawn as usual. Break even point is indicated by intersection of total cost line and sales line.



Third Method: Under this method, the fixed cost line is drawn parallel to the X-axis. The contribution line is drawn from the origin and this line goes up with the increase in output. Sales line is drawn as usual. In this method, BEP is the point where contribution line cuts fixed cost line. At this point contribution is equal to fixed expenses and there is no profit no loss.



(b) Elaborate Break Even Chart: These charts are also called Revenue Analysis Charts or Fantail charts. One limitation of simple break even charts is that show only basic relationship of cost, profit and volume by pointing out BEP and margin of safety. Break-even charts can be prepared exhibiting relatively are details regarding cost and profit.

For this purpose, available relation is broadly divided into different sections to show

income before tax or after tax. Similarly, it can obtain appropriation of profit to taxes, dividend and reserves. It can also show pref. dividend, ordinary material, direct labour, variable factory overhead, variable administration overhead. Area for fixed cost can be divided in different sections to show out of pocket cost or depreciation etc.

For preparation of detailed break-even chart, first of all usual procedure for preparation of simple break-even chart with variable cost at base has been followed. Thereafter, the area available for profit, fixed cost and variable cost has been further divided to show various details relating to each of these elements.

(c) Cash Break-Even Chart : This chart is prepared to show the volume at which cash breaks even, i.e. the point at which the cash inflow will be just equal to the cash required to meet immediate cash liabilities. For the purpose of drawing this chart, the fixed costs are dividend in to two categories: (1) fixed cost which require immediate cash outlay e.g. rent, salaries etc. While drawing the chart, the cash fixed costs are' plotted first parallel to the base line, variable costs are the plotted over them. The non cash are plotted in the last. The sales line is plotted as usual.

(d) Control Break Even Chart: Break even chart can also be prepared for managerial control purposes by making it a part of the budgetary control system. The control break even chart compares actual cost with the budgeted costs, actual sales with the budgeted sales, actual profit with budgeted profit and actual break even point with the budgeted break even point.

Self Check Questions

(g) What is Break-Even Point (BEP) in CVP Analysis?

(h) What is the Assumption Regarding Fixed Costs in CVP Analysis?

16.15 PROFIT VOLUME CHART

Profit volume chart prominently exhibits the relationship between profit and sale volume. The normal break-even-charts suffer from one limitation. Profit can not be read directly from the charts. It is essential to deduct total cost from sale to know the profit figure. The profit graph overcome the difficulty by plotting profit directly against an activity. These charts are easy to understand and their preparation involves drawing sales curve and profit curve. The point at which profit line cuts the sales line called break-even point.

SEQUENTIAL PROFIT GRAPH

Sometimes a company manufacturers more than one product of varying profitability. A change in the profitability of one product will lead to a change in the profitability of group as a whole. Profit volume chart can be prepared for a group also. This chart shows relative profitability of different products, it is also called profit-volume graph for a group of products, sequential profit graph or profit path chart. Its main advantage is that it exhibits the relative profitability of different products at a glance.

Assumptions Underlying Break Even Charts

1. Total cost can be separated into fixed and variable costs.
2. Fixed costs remain constant at every level and they do not change with change in output.
3. Variable cost do not fluctuate per unit of output. In other words, they vary in the same proportion in which the volume of output of sales varies.
4. Selling prices remain constant even when volume of production or sale changes.
5. Cost and revenue depend only on volume and not on any other factor.
6. There is only one product or in case of mar^* product, produce mix will remain unchanged.

7. No. of units produced and sold will be same so that there is no opening or dosing stock.

Advantages of Break Even Charts

1. Provides detailed and clearly understandable information

The chart visualizes the information very clearly and a glance at the chart shall give a vivid picture of the whole affair. The different elements of cost-direct material, direct labour, overheads can be presented through an analytical break even chart. Further, the information presented is in a .simple form and therefore, is clearly understandable even to a layman.

2. Profitability of products and business can be known

The probability of different products can be known with the help of break even charts, besides the level of no profit no loss. The problem of managerial decision regarding temporary or permanent shut down of business or continuation at a loss can be solved by break even analysis.

3. Effect of changes in cost and selling price can be demonstrated

Relationship of cost, volume and profit at different levels of activity and varying selling prices is shown through the chart. Thus it studies the requisites for survival of the company.

4. Cost control can be exercised

Break even chart is a tool for cost control because it shows the relative importance of the fixed costs and the variable cost.

5. Forecasting and planning possible

Break even analysis is very helpful for forecasting, long term planning, growth and stability.

6. Economy and efficiency can be effected

The capacity can be utilised to the fullest extent and the economies of scale and capacity utilisation can be affected. Comparative plant efficiencies can be studied through the break even chart. The operational efficiency of a plant is indicated by the angle of Incidence formed at the intersection of the total cost line and sale line.

Limitations :

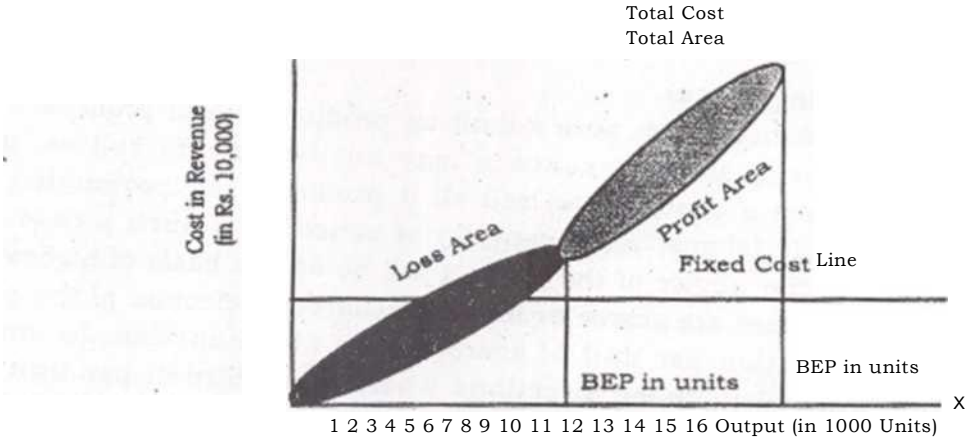
1. A break even chart is based on number of assumptions which may not hold good. Fixed costs vary beyond a certain level of output. Variable costs do not vary proportionately if the law of diminishing or increasing returns is applicable in the business. Sales revenues do not vary proportionately with change in volume of sales due to reduction in selling price as a result of competition or increased production. In break even chart, we have seen that the total cost line and the sales line look straight lines. This is possible only with no. of assumptions. But in practice these lines are not straight because assumptions do not hold good. Thus there might be several break even points at different levels of activity.
2. A limited amount of information can be shown in a chart, number of charts will have to be drawn up to study the effects of the changes in fixed costs, variable costs and selling prices.
3. The effect of various product mixes on profits can not be studied from single break even chart.
4. A break even chart does not take into consideration capital employed which is a very important factor in taking managerial decisions. Therefore, managerial decisions on the basis of break even chart may not be reliable.

In spite of above limitations break even chart is a useful management device for analysing the problems. If it is constructed and used by those who fully understand its limitations.

CURVILINEAR COST VOLUME PROFIT ANALYSIS

Certain critics are of the opinion that traditional CVP is only of theoretical importance due to assumption stated earlier. The views of accountants contradict with the views of economists, who hold that:

1. Based on the phenomenon of diminishing marginal productivity, total cost line will not be a straight line. It will be of curvilinear type.
2. In real life situation, additional units can be sold by lowering the prices. Therefore sales line will not be a straight line. It will be concave to the base i.e. sales line will be curvilinear.
3. The decreasing rate of sales line and behaviour of cost line provided two break even points. Behaviour of cost line is influenced by such factors as (a) fixed cost is not fixed throughout; and (b) variable cost is not same throughout. It will decline initially as long as there are increasing returns. It will remain constant as long as average physical product per unit of output is constant, it will eventually increase after the point of decreasing average return has been reached. This causes the total cost line to behave as in figure A.



When the total cost line and total sales line of economist are plotted on graph paper. The points A, and Aj are two break even points A, is at a relatively lower level of output and A, is at higher level. Areas between A, and A_2 represents profit area. One of the benefits of this analysis is that it identifies the optimum level of output. Profit will be maximum at the point where there is maximum vertical distance between total revenue and total cost curves. Traditional cost-volume profit analysis is of saying whether, traditional break even chart has any operationally significant meaning at all. The divergence in the views of accountants and the economists call for curvilinear approach to cost-volume profit analysis i.e. an analysis which is not based on assumptions relating to traditional CVP analysis. Recent analysis of industrial CVP experience also confirms that a .more sensitive and segmentation approach

should be made to provide management with better base for decision making.

16.16 USES OF MARGINAL COSTING

16.16.1 Fixation of Selling Price : In normal Circumstances the price fixed must be over total cost as otherwise profits can not be earned. It can also be fixed on the basis marginal cost by adding ahigh margin to marginal cost which may be sufficient to contribute towards fixed expenses and profits.

16.16.2 Pricing in depression : Prices may fall during depression and product may be sold t?elow the total cost. Selling prices should be equal to the marginal cost. If the selling price at which the goods can be sold is equal to marginal cost or more than marginal cost, the product should be continued. Fixed expenses will be incurred even if the product is discontinued during depression for a short period. If the product can be sold at a price which is little more than marginal cost, loss on account of fixed expenses will reduce because price will recover fixed expenses to some extent.

Selling price below the marginal cost, may be necessary for the following reasons :

1. To keep machinery and factory in running condition so that it remains in readiness to go full steam ahead; when temporary difficult period is over.
2. To keep the employees occupied.
3. To dispose of perishable goods.
4. To derive the weak competitors out of market.
5. To popularise the new product - This step may be temporarily resorted to so that the new product may gain recognition in the market.
6. When foreign market is to be explored to earn foreign exchange.
7. When the sales of one product at a price below the marginal cost will push up the sales of the profitable products, the loss in one product will be make up profits in other products.

16.16.3 Key (or Limiting) factor

A key factor is that factor which puts a limit on production and profit of a business. Usually the limiting factor is sales. A concern may not be able to sell as much as it can produce. But sometimes a concern can sell all it produces but production is limited due to shortage of materials labour, plant capacity of concern. In such a case a decision has to be taken regarding, the- choice of the product will be on the basis of highest P/V ratio or contribution. But when there are scarce or limited resources, selection of the product will be on the basis of contribution per unit of scarce factor of production. In short, scarce, resources should be utilised in those directions where contribution per unit of limited resources is maximum.

16.16.4 Make or Buy Decisions

Sometimes, a company has to decide, whether should make the component of its product or it should buy it from the market. On the face to it, decision to make or buy should involve comparison of seller's price with marginal cost of that product. But this approach will lead to wrong conclusion. When a component is produced a part of plant capacity is utilized,

i. e. some contribution is earned. If a company is running at its full capacity the contribution thus earned will be lost by not manufacturing the component. Of course, if company is not working at its full capacity the question of lost contribution will become irrelevant. Thus this *lost contribution' becomes another factor of consideration in taking decisions, whether to manufacture a component or buy it form outside. This factor of lost contribution' will assume importance only when the company is running at its full capacity. Following points should

be considered in deciding whether company should manufacture the component of its product or it should buy it form market.

1. Seller's Price.
2. Marginal Cost of producing the component.
3. Lost contribution when company is running at full capacity.
4. Company may not like to depend on contractor for supply of component. In a situation like, this company will only to make the component.
5. Govt. policy etc. may influence the decision of the company.

16.16.5 Selection of a Suitable Product Mix

When a factory manufactures more than one product, a problem is faced by management as to which product mix will give the maximum profits. The best product mix is that which yields the maximum contributions. The products which give the maximum contribution are to be retained and their production should be increased. The products which give comparatively less contribution should be reduced or closed down. altogether. The effect of sales mix can also be seen by comparing the P/V ratio and break even point. The new sales mix will be favourable it increase the P/V ratio and reduces the break even point.

16.16.6 Maintaining Desired Level of Profits

Management may be interested in maintaining a desired level of profits. The volume of sales needed to have a desired level of profits can be ascertained by marginal costing technique.

16.16.7 Alternative Method-of Production

Marginal costing is helpful in comparing the alternative methods of production e.g., machine work or hand work. The method which gives greatest contribution is to be adopted keeping of course, limiting factor in view.

16.16.8 Diversification of Products

Sometimes it becomes necessary for a concern to introduce a new product to the existing product or products in order to utilise the ideal capacity to capture a new market or for other purposes. In order to decide about the profitability of the new product, it is assumed that the manufacture of the new product will not increase fixed cost of the concern and if the price realised from the sale of such product is more than its variable cost of production it is worth trying.

16.16.9 The management may decide to suspend or close the activities of a particular product, department or factory as a whole due to trade recession.

16.16.10 Alternative Course of Action

The course of action which yields the greatest contribution is the most profitable to be followed by the management.

16.16.11 Illustration

A Co. Ltd. has prepared the following budget estimates for the year 1995-96:

Sales units	15,000
Fixed Expenses	Rs. 34,000 •
Sales Value	Rs. 150,000
Variable Cost	Rs. 6 per unit

You are require to:

(i) Find out the P/V ratio, break-even point and margin of safety

(ii) Calculate the revised P/V ration, break-even point and Margin of Safety in each of the

following cases :

(a) Decrease of 10% in selling price;

(b) Increase of 10% in variable cost;

(c) Increase of sales volume by 2,000 units.

Solution:

	Rs.
Sales value of 15,000 units	150,000
Less: variable costs of 15,000 units @ Rs. 6 per unit-	90,000
Contribution	60.000

. Contribution

P/V raU° " — Sah^— * 100

60,0 x100 = 40%

1,50,000

Fixed Expenses

Break Even Point - P/v ratio

= Rs. 85,000

Too

Margin of Safety - Sales - Break Even Sales

- Rs. 1,50,000 - Rs. 85,000
- Rs. 65,000

(a) If selling price is reduce by 10%

	Rs.
Sales Value	150,000
Less: 10% reduction in price	15,000
Sale value after 10% reduction	1,35,000
Less: Variable cost of 15000 Units @ Rs. 6	90,000
Contribution	45,000

Margin of Safety - Sales - Break Even Sales

* Rs. 1,35,000 - Rs. 1,02,000
- Rs. 33,000

(b) If variable cost increased by 10%

	Rs.
Sale value of 15,000 units	150,000
Less: variable costs of 15,000 units @ Rs. 6.60 per unit- .	99,000
Contribution	51,000

Margin of Safety - Rs. 1,50,000 - Rs. 1,00,000 = Rs. 50,000

(c) If sells value increased by 2,000 units

	Rs.
Sales value of 15,000 units	150,000
Add: Sales value of 2,000 units @ Rs. 10 per unit	20,000
Sale value of 17,000 units	1,70,000 "
Less: Variable cost of 17,000 units @ Rs. 6	1,02,000.,
Contribution	68,000

P/V - $\frac{1,70,000}{68,000} \times 100 = 40\%$

Break Even Point * $\frac{34,000}{100}$ = Rs. 85,000

Margin of safety - Rs. 1,70,000 - Rs. 85,000 * Rs. 85,000

16.17 Limitation of Marginal Costing

1. It is difficult to classify all expenses into fixed and variable whereas marginal costing assumes that all expenses can be analysed into fixed and variable.
2. Time factors is not given due attention because marginal cost excludes expenses which are connected with time. Fixed expenses should be considered if the suitable comparison of two jobs is to be made.
3. Cost control can be better achieved with the help of other technique such as budgetary control and standard costing.
4. Sometimes order from a new customer is accepted at a very low price on the argument that if marginal cost is little less than the price of the order it will give some contribution. This may sometimes lead to a general reduction in selling price and thus to losses.
5. It is possible that a concern using marginal costing may value work in progress and finished stocks at marginal costs. The disadvantages of which are as follows :
   (a) Balance sheet will not exhibit a true and fair view because work in progress and finished stocks will be shown at marginal cost, which does not include fixed expenses.

(b) In case of loss by fire full loss on account of stock destroyed by fire can not be recovered from the insurance company because marginal costing technique of valuation of stock will not take fixed expenses into considerations.

16.18 KEYWORDS

Marginal Costing:A costing method where only variable costs are considered in determining the cost of a product.

Contribution: The difference between total sales revenue and total variable costs, representing the amount available to cover fixed costs and contribute to profit.

Break-Even Point (BEP): The level of sales at which a business covers all its costs, resulting in neither profit nor loss.

Cost-Volume-Profit (CVP) Analysis: An analytical tool that examines the interplay of costs, sales volume, and profit to assist in decision-making and planning.

16.19Self Check Exercise

Short Answer Questions

(a) Define Contribution Margin and its significance in decision-making.

(b) Explain the concept of Break-Even Point and its importance in CVP Analysis.

(c) How is the Contribution Margin Ratio calculated, and what does it signify?

Long Answer Questions

1. Explain the fundamental principles of Marginal Costing. How does it differ from Absorption Costing, and in what situations might a business prefer one over the other?
2. Provide a comprehensive overview of the components of Cost-Volume-Profit (CVP) Analysis. How can businesses use CVP Analysis to make informed decisions and achieve strategic objectives?
3. Illustrate the calculation and interpretation of the Break-Even Point (BEP) in both units and sales dollars. Discuss the significance of the BEP in financial planning and decision-making.
4. Describe the concept of Contribution Margin Ratio. How does it contribute to the analysis of a company's financial performance, and what factors can influence its value?

16.20 ANSWER KEYS (Self Check Exercise)

(a) Marginal costing is a costing technique where only variable costs are considered in the product cost, while fixed costs are treated as period costs.

(b) Marginal cost includes variable costs plus any variable portion of fixed costs associated with producing one additional unit. Variable cost, on the other hand, includes only costs that vary with the level of production.

(c) Absorption costing is a method of accounting for all costs associated with the production of a good or service.

(d) Contribution is the difference between total sales revenue and total variable costs. It represents the amount available to cover fixed costs and contribute to profit.

(e) CVP analysis helps in assessing the impact of changes in volume, price, and costs on the company's profit. It aids decision-making by providing insights into the break-even point, profit potential, and risk associated with different business scenarios.

(f) One limitation of marginal costing is that it may not be suitable for long-term decision-making as it ignores the impact of fixed costs on overall profitability.

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APPLICATION OF MARGINAL COSTING

17.1 INTRODUCTON

The ICMA London, has defined ‘marginal cost' as * the amount at any given volume of output by which aggregate costs are changed of the volume of output is increased or decreased by one unit. In practice, this is measured by the total variable cost attributable to one unit." Accordingly marginal costing has been defined by, the Institute of Cost and Management Accountant as “the ascertainment, by differentiating between fixed costs and variable costs, of marginal costs and of the effect on profit of changes in volume of type of output." Thus, marginal costing is not a system of ascertaining cost, such as process costing, job costing, operating costing etc., but a special technique which is concerned with the changes in costs resulting from changes in the volume of range of output. J. Batty has defined marginal costing as “a technique of cost accounting which pays attention to the behaviour of costs with changes in the volume of output.” It is said to be super-imposed upon a system of job costing or process costing.

17.2 FEATURES OF MARGINAL COSTING

Marginal costing technique has the following main features:

1. Marginal costing is not a method of costing like process costing, job costing, operating costing etc., but a technique dealing with the effects of changes in the cost, volume, price, sales mix on-the profits.
2. Marginal costing is concerned with marginal cost only. Under marginal costing technique, cost of production comprises of variable costs only. As such the valuation of the finished goods and work-in-progress is made on the basis of variable costs only.
3. Fixed costs do not form part of cost of production for the purposes of marginal costing. They are treated separately and may be charged wholly to the profit and loss account for the accounting

4. The profitability of a product or department is ascertained in terms of Contribution or contribution margin. Contribution represents the difference between sales value and marginal cost of sales. The aggregate of contribution for all products is called fund.
5. For marginal costing techniques prices of the various products are fixed by the manufacturing concerns on the basis of marginal cost and marginal contribution.

17.3 STEPS INVOLVED IN MARGINAL COSTING

The technique of marginal costing involved a differentiation between fixed costs and variable costs; b ascertainment of marginal costs; andascertaining the effect on profit due to changes in volume of type of output i.e., the determination of cost-volume-profit relationship.

17.4 BENEFITS OF MARGINAL COSTING

The following are the main benefits of marginal costing: a It is simple to understand and easy to operate. The valuation of closing stock under valuation of closing stock under marginal costing is done at marginal cost and thus prevents the illogical carry forward of fixed costs of one period to the next period as part of closing stock.

b There is no problem of computing fixed overhead recovery rates and their under over recovery as fixed overhead are charged against the contribution, c In marginal costing, it is established that profit is a function of sale and not of production as profit depends on sales volume and not on production volume. This can be verified by preparing a profit statement under marginal costing, It facilitates control over variable costs by avoiding arbitrary apportionment or allocation of fixed costs. It is very useful tool of profit planning. It guide the management about the profitability of earning profit at various levels of production and sales. It is very valuable technique in decision-making. It provides information to the management in making decision like make or buy, selling price fixation, export decision etc.

g. It provides the management with useful techniques like Break-even analysis, P/V ratio etc. It helps in cost control by concentrating on variable costs, as the fixed cost is non- controllable in the short period.
h. It helps in evaluation of performance of different departments, division and salesman. It is a valuable adjustment to standard costing and budgetary costing.

17.5 DRAWBACKS OF MARGINAL COSTING

1. In marginal costing all the fixed and variable costs are in segregated form which is very difficult is actual practice.
2. Calculations of variable costs and overheads are made on the basis of estimates and not on actual basis.
3. The technique of marginal costing assumes that total fixed cost is constant at all levels which is not practical in nature.
4. Time factor is not given.
5. Not suitable for the industries where value of work-in-progress is high in relation to turnover.

Self Check Questions

(a) What is the primary focus of marginal costing in decision-making?
   1. Total costs
   2. Variable costs
   3. Fixed costs
   4. Mixed costs

(b) Which analysis helps in determining the level of sales needed to cover all costs and achieve zero profits?
   1. Break-even analysis
   2. Cost-volume-profit analysis
   3. Variance analysis
   4. Sensitivity analysis

17.6 APPLICATION OF MARGINAL COSTING :

The marginal costing technique is useful is managerial decision making in the following situations:

i. Key or limiting factor analysis
ii. Profit planning
iii. Optimising product mix
iv. Contribution analysis
v. Make or buy decisions
vi. Price fixation
vii. Discontinuance or diversification of product line
viii. Accept or reject special offer and sub-contracting
ix. Break-even analysis
x. Cost-volume-profit analysis

17.6.1. KEY OR LIMITING FACTORS ANALYSIS

Marginal costing can also be used in budgeting to help management to determine what the profit maximising budget. Plan should be when one or more factors of production or other business resources are in short supply. Marginal costing really shows its merit when scarce resources are being considered.

Examples of resource restrictions which may apply are as follows. If labour supply, materials availability, machine capacity or cash availability limit production to less than the volume which could be achieved, management is faced with the problem of deciding what to produce and what not to produce, because there are insufficient resources to make everything.

Cost Control: Marginal costing divides the total cost into fixed and variable cost. Fixed cost can be controlled by the top management & that to a limited extent. Variable costs can be controlled by the lower level of management. Marginal costing by concentrating all efforts on the variable cost can control & thus provides a tool to the managment for control of total cost. Fixed cost are also shown separately as a deduction from the contribution. This helps the management to have control on fixed costs also in the long period as these costs are programmed in advanced.

17.6.1.2 Example

X.Y.Z Ltd. manufactures and sell three products C, S and T.

Budgeted Sales demand	C 300 units		S 500 units		T 200 units	
Unit sales price		16		18		14
Variable costs :						
Materials	8	6	2			
Labour	4	12	6	12	9	11
Contribution		4		6		3

All three products use the same direct materials and the same type of direct labour. In the next year, the valuation supply of materials will be restricted to Rs. 4,800, and the available supply of labour to Rs. 6,600. What would be the profit-maximizing budget?

The profit-maximizing budget is assumed to be contribution-maximizing (i.e. fixed costs are unaffected by the decision).

a. Is three a limiting factor, several limiting factors, or none?

Particulars	Units of demand	Required materials Rs.	Required labour cost Rs.
C	300	2,400	1,200
s	500	3,000	3,000
T	200	400	1,800
Total required		5,800	6,000
Total available		4,800	6,600
(Shortfall) / Surplus		1,000	600

Materials are a.limiting factor, but labour is not.

b.

Particulars		C	8	T
Unit contribution	(i)	4.00	6.00	3.00
Cost of materials	(ii)	8.00	6.00	2.00
Contribution per Rs. 1 of materials	(U) /(i)			
Priority for manufacture		3rd	2nd	1st

T should be manufactured up to the limit of sales demand, than S second and C third, until the sales demand for each or the amount of materials available has been used up.

Particulars	Product	Units	Materials Cost Rs.	Units Contribution (Rs.)	Total Contribution (Rs.)
i. 1st	T	200	400	3	600
ii. 2nd	S	500	3,000	6	3,000
iii. 3rd	C	.175	1,400 (balance)	4 .	700
			4,800		4,300

The profit maximizing budget would to make and sell 200 units of T 500 units of S and 175 units of C to earn and contribution of Rs.4,300.

Self Check Questions (True/False)

(c) Marginal costing is particularly useful for short-term decision-making due to its focus on variable costs.

(d) Contribution margin can be expressed as a percentage, known as the contribution margin ratio, providing insights into profitability.

(e) In cost-volume-profit (CVP) analysis, the break-even point is the level of sales where total contribution margin equals total fixed costs.

(f) Marginal costing is beneficial in scenarios where production levels fluctuate, as it provides a clear understanding of the cost behavior at different levels of activity.

17.6.2 PROFIT PLANNING

The profit of a business concern can be improved by increasing volume, by increasing selling price, by decreasing variable costs, and by decreasing fixed costs in this, materials of marginal costing it profits great help in doing sensitivity analysis by observing different cost and revenue situation and its resultant impact on profit and guides in the determination of activity level to achieve target profit. .

17.6.2.1 Illustration

The following is the summarized trading account of Punjab manufacturing Ltd. which makes two products, Rand L. Summarized trading account for the months to 30th April, 2001.

Particulars	R Rs.	L Rs.	Total Rs.
Sales	10,000	4,000	14,000
Less : Cost of sales			
Direct costs			
Labour	3,000	1,000	
Materials	1.500 4.500	1.000	
	5,500	2,000	6,500
Indirect costs			
Variable expnses	2.000	2,000	
Fixed expenses	3,500		7,500
Common to both R & L	1.250	1.000	
Net profit	2,250	1,000	
		1.250	
		(-) 250	3,000
			4,500
			2,500
			2,000

These costs tend to very indirect proportion to physical output.

These costs tend to remain constant irrespective of the physical outputs of Rand L.

It has been the practice of the concern to allocate these costs equally between R and L. The following proposals have been made by the Board of Directors for your consideration as financial adviser :

1. Discontinue Product L
2. As an alternative to (1) reduce the price of L by 20 per cent. (It is estimated that the demand will than increase by 40 per cent). ■
3. Double the percent of R (It is estimated that this will reduce the demand by the three fifths).

You are required to recommend the proposal to be taken after evaluating each of these three proposals.

1. Profit statement when product L is discontinued :

In case product L is discontinued, product R will also have to bear the fixed expenses previously borne by L. The final position will be as follows :

(Rs.)

Existing Net Profit of R Less : Fixed expenses of L	2.250 1.250
Final Net Profit	1,000

2. Profit statement when the price of L is reduced by 20 percent

(It will result in 40% increase in demand)

Sales (10,000 x 200/100 * 2 / 5	8,000
Less : Direct Costs (Rs. 4,500-60% of Rs. 4,500)	1,800
	6,200
Less : Indirect Costs - Variable expenses (Rs. 2,000-60% of Rs. 2,000)	800
Contribution	5,400
Less : Fixed Expenses (old)	1,250
	4,150
Less : Net Loss of L (old)	250
Final Net Profit	3,900

3. Profit statement when the price of R is doubled

. (this will reduce the demand by three-fifths or 60%)

Sales (10,000 * 200/100 * 2 / 5	8,000
Less : Direct Costs (Rs. 4,500-60% of Rs. 4,500)	1,800
	6,200
Less : Indirect Costs - Variable expenses (Rs. 2,000-60% of Rs. 2,000)	800
Contribution	5,400
Less : Fixed Expenses (old)	1,250
	4,150
Less : Net loss of L (old)	250
Final net Profit	3,900

The above analysis shows that the net profit is maximum under alternative (3) L., when the price of R is doubled and the demand reduces by three fifths. This alternative will increase the present level of net profit from 2,000 to 3,900 for a four-monthly period. It is therefore, suggested that the concern should adopt alternative (3).

17.6.3 OPTIMISING PRODUCT MIX

In case of multi-product and multi-lines of activity, the problem arises as to which product or sale mix will yield maximum profit. Such problems can be solved by marginal costing technique.

17.6.3.1 Illustration.

Alford Auto parts has three Products P, Q and R Currently sales, cost and selling price details and progressing time requirements are as follows:

Particulars		Product P	Product Q	Product R
Annual Sales	(Units)	6,000	6,000	750
Selling price	(Rs.)	" 20	31	9
Unit Cost	(Rs.)	18	24	30
Processing time required per unit	(Hrs.)	1	1	1

The firm is working at full capacity (13, 500 processing hours per year).

Fixed manufacturing overheads are absorbed in to unit costs by a charge of 200% of variable costs. This procedure fully absorbs the fixed manufacturing overhead.

Assuming that:

i. Processing time can be switched from one product line to another.

ii. The demand at current selling price is

Product P	Product Q	Product R
11,000 units	8,000 units	2,000 units

iii. The selling prices are not to be altered.

You are required to calculate, the best production programme for the next operating period and to indicate the increase in net profit that this should yield. In addition, identify the shadow price of a processing hour.

According to the problem, the fixed manufacturing costs are absorbed in to the unit costs by charged of 200% of variable cost. It, therefore, means that variable cost in one-third of total unit cost. Computation of contribution per processing hour.

Particulars	Product P	Product Q	& Product R
Selling Sales	' 20	31	39
Variable cost	6	8	' 10
Contribution per unit	14	23 >	29
Processing per unit (Hrs.)	1	1	2
Contribution per processing hour	14	23	14.50
Ranking	III	I	11

Computation of Contribution as per existing programme

Product	Output	Hours used	Contribution (Rs.)
P	6,000	6,000	84,000
Q	6,000	6,000	1,38,000
R	750	1,500	21,750
.			2,43,750

The above analysis shows that contribution and profit will increase by Rs. 19,250 (i.e.,Rs. 2,63,000, Rs. 2,43,750) it the optimal production programme is implemented. An additional hour of processing would be used to increase the production of

product P by one unit. This will increase contribution by Rs. 14. Hence, the shadow price (or opportunity cost) of one scarce processing hour is Rs.14.

17.6.4 CONTRIBUTION ANALYSIS

The analysis of the contribution per unit each product makes towards fixed or current period costs and profit leads to the preparing of statements showing the total contribution each product class has made towards the recovery of period costs. These statement may be further refined by deduction any discretionary or separable period costs (i.e., cost such as annual tooling and product advertising) which should be avoided if the product line were dropped.

17.6.4.1 Illustration : Discuss profitability of the following two products:

Production cost per unit (Rs.)

Particulars	Product 8	Product C
Materials	200 100 350 150 200 1,000	150 200 100 200 350 1,000
Wages	200 units	100 units
Fixed overhead Variable overhead Profit		
Selling price Output per week		

Statement of comparative profitability per unit of products

_____ *(Rs.)*

Particulars	S	C
Selling price	1,000	1,000
Less : Marginal Cost	450	550
Contribution	550	450
Less : Fixed Cost	350	100
Profit per unit	200	350
Total profit	40,000	35,000
P.V. Ratio	55%	45%
Profit/Sales ratio	20%	35%

Although profit per unit of product C is more than that of product S the contribution and profit of S are more than that of C. If output is increased or decreased, fixed cost per unit will also fluctuate. In such a case, contribution is a better indicator of profitability.

If any key factor is an operation, than contribution in relation to the key factor should be taken into account while deciding upon the profitability of the products, other things remaining the same, S is a more profitable product C.

17.6.5 MAKE OR BUY DECISION

Make or buy decision-is simply the choice between making a part or article within the company or purchasing it from outside.

17.6.5.1 Illustration: AXE Ltd. Manufactures a special box which has three components. R S and T, one of each being required for each box. The company is working to its full machine capacity of 28,000 boxes per period and the machinery used is capable of making all the components. The box are made in batches of 20 and data relating to current production are:

Components	Machine Hours	Variable Cost Rs.	Per batch of 20 fixed costs Rs.	Total Costs Rs.
R	6	15	6	21
S	10	18	7	25
T	12	18	18	*36
Assembly	-	32	13	45
	28	83	44	127
Add Profit Selling Price				23 150

Over the next budget period the machine capacity cannot be increased although the assembly capacity can be increased as required. The budget for the next period is being prepared. Because sales are buoyant the purchase of one of the components is being considered and the following quotation has been received:

Component	Batch of 20 Price (Rs.)
R	22
S	28
T	32

The company has decided that only one component will be bought outside in one period. The sales director thinks that he could sell at least 50% more tables than at present and probably 75% more provided that the production capacity was available.

You are required to:

a. Recommend which component should be bought outside if production is increased by 50% and how many components should be bought.

b. Recommend which component should be bought outside if production is increased by 75% and how many components should be bought.

(a) and (b) (p/b of 20)

Components	Price quoted Rs.	Variable costs Rs.	Contribution Rs.	Machine Hours Rs.	Contribution per machine hrs. Rs.
R	22	15	7	6	1.17
S	28	18	10	10	1.00
T	32	18	14	12	1.17

Machine capacity is the limiting factor in the present case. As the contribution from S

per hour is the lowest, the same should be purchased from the outside. Number of batches -28.000 hrs. / 28 * 1,000 hrs. If sales director's target of 50% increase in sales is achieved, the hours allocated will be as under:

Available hours		28,000
Less : Required to make R	(1,500 x 6 hrs.)	■9,000)
Required to make T	(1,500 x 12 hrs.)	(18,000)
Balance hours required to make s	⇄OO× 10 hrs.)	11,000)

Therefore 1,400 components of S* should be purchased, to achieve 75% increase in sales, the only option is to sub/contract T and this balance exactly.

Available hours		28,000
Less : Required to make R	(1,750 x 6 hrs.)	(10,500)
Required to make T	(1,750 x 10 hrs.)	(17,500)

Purchased 1,750 components of T

17.6.6 PRICE FIXATION

Under the method fixed costs are ignored and prices are determined on the basis of marginal cost. A firm seeks to fix its prices so as to maximise its total contribution. Marginal cost is the change in total costs that results from production of additional unit of a product or service. Marginal costing is more effective than full cost pricing for the following reasons :

— Prevalence of multi-product, multi-process and multi-market concerns makes the absorption of fixed costs into product costs is difficult.

— Constant development in science and technology makes the long-run situation more uncertain and highly unpredictable. Long-run consists of a series of short- runs and we must aim at maximising contribution in each short-run which will lead profit maximisation in the long-run.

17.6.6.1 Illustration

Particulars	Product E	Product F
Direct materials	4	12
Direct labour	6	14
Variable factory overheads	6	3
Variable selling and administration overheads Minimum Price - Marginal Cost	2	3
		22

17.6.7 DISCONTINUANCE OR DIVERSIFICATION OF PRODUCT LINE

Whether a product in the factory is discontinued or diversified on the basis of its profitability, it can be judged through this technique

17.6.7.1 Illustration: The ABC Ltd. produces and sell three types of products X, Y and Z. The management committee has decided to discontinue the production or 'S' since there is no much profit in it. From the following set of information find out the profitability of the products and give your short comments on the decision of the management.

Product	Selling Price Per unit Rs.	Direct Material Per Unit Rs.	*s Direct Wages per unit		
			Dept. D Rs.	Dept. E Rs.	Dept. F Rs.
P	300	60	20	15	10 •
Q	275	► 30	20	20	10
R	305	70	.12	10	20

STATEMENT OF PROFITABILITY OF THE COMPANY

Particulars		X	Y	Z
Selling Price Per Unit		300	270	305
Direct Material		60	30	70
Direct Wages : -	Department D	20	20	..-12
	Department E	15	20	■ io
	Department F	10	10	20
PRICE COST		105	80	112
Variable overheads :	Department D	30	30	18 •-
	Department E	18	24	12
	Department F	20	20	40
Total		68	74	70
Total Variable cost		173	154	182
Contribution		127	121	123
Fixed Cost :	Department D	40	40	24
	Department E	36	48	24
	Department F	15	15	30
Total		91	105	78
Profit		36	18	45
PV Ratio		42%	44%	1 40%

Comment: The management has taken a view to discontinue product: S bases on unitary profit. This is wrong decision. Management can explore the benefits of product S because of its higher PV Ratio.

17.6.8 ACCEPT OR REJECT 8UB-CONTRACTING AND NEW ORDER

In times of taking decisions to accept or reject new order or in sub-contracting, the contribution analysis is made as to whether It is profitable to accept or reject new order subcontracting. The following problems demonstrate the use of the contribution technique.

17.6.8.1 Illustration

A company currently operating at 80% capacity has the following particulars:

	(Rs.)
Sales	32,00,000
Direct Materials	10,00,000
Direct Labour	4,00,000
Variable Overheads	2,00,000
Fixed Overheads	13,00,000

An export order has been received that would utilized half of capacity of the factory. The order cannot be split. The alternatives available to the management that it may reject or accept the order or continue with domestic sales or to increase capacity. Suggest the profitable and best alternative.

A.	Sale Revenue at 80% capacity at 100% capacity - Rs. 32,00,000 x 100/80	- Rs. 40,00,000
B.	Export Sales at 50% capacity - Rs. 40,00,000. * 50/100 Less - 10% reduction in selling price	= Rs. 20,00,000 Rs. 2,00,00
	Net Export Sales	18,00,000
C.	Direct material at 80% capacity - at 100% capacity - Rs. 10,00,000 x 100 / 80 at 130% capacity - Rs. 12,50,000 x 130 / 100 Direct Labour ' at	- Rs. 10,00,000 - Rs. 12,50,000 - Rs. 16,25,000
D.	80% capacity - at 100% capacity - Rs. 4,00,000 x 100 / 80	- Rs. 4,00,000 - Rs. 5,00,000
E.	Variable Overhead at 80% capacity at 100% capacity - Rs. 2,00,000 x 100 / 80 at 130% capacity * Rs.2,50,000 x 100 / 80	- Rs. 2,00,000 - Rs. 2,50,000 - Rs. 3,25,000
	Upto 110% at normal rate Rs. 5,00,000 x 110/100 Next 20% at 1.5 times normal rat Rs. 5,00,000 x 20/100/1.5	- Rs. 1,50,000

Suggestions:

1. If domestic market is meet out at 80% capacity and export order is rejected.
2. If domestic market is meet out 50% capacity and export order is accepted.
3. If domestic market is meet out at 80% of capacity and export order is accepted by installing equipment to increase 10% capacity plus 20% capacity increased by paying overtime 1.5 times at normal rate.

Profitability of the above suggestions can be compared through the profitability statement as:

Profitability Statement

Particulars/Capacity level	80%	100%	130%
' Sales Domestic Export	32,00,00	20,00,000 18,00,000	32.0. 000 18.0. 000
Total	32,00,000	38,00,000	50,00,000

Variable Costs Direct materials Direct Labour Variable Overheads	10,00,000 4.0. 000 2.0. 000	12.50.0 5,00,000 2.50.000	16.25.0 7,00,000 3.25.000
Total	16,00,000	20,00,000	26,50,000
Contribution Less - Fixed Cost	16,00,000 13,00,000	18,00,000 13,00,000	23,50,000 14,00,000
Profit	3,00,000	5,00,000	9,50,000

In this way according to suggestion 3 it is profitable for the firm to increases capacity. 17.6.9 TEMPORARY CESSATION OF OPERATIONS

Some time it is profitable to stop production of one product due to seasonal works etc.; it can be decided by this method.

17.6.9.1 Illustration XYZ Ltd. has three divisions each of which makes a different product. The budgeted data for the next year are as follows :

(Rs.)

Divisions	A	B	c
Sales (i) Costs : Direct material Direct labour Overhead Fixed Costs Total Costs (ii) Profit / (loss) (i) - (ii)	1,12,000 14.000 5.600 14.000 28.000 61.600 50,400	56.000 7.000 7.000 7.000 14.000 35.000 21.000	84.000 14.000 22.400 28.0 28,000 92.400 (8,400)

Profitability Statement

Particulars	A	B	C	Total
Sales Less : Variable Cost	1,12,000 33,600	56.000 21.000	84,000 64,400	2.52.000 1.19.000
Contribution Fixed Costs Profit	78,400	35,000	19,600	1,33,000 70,000 53,000

It is clear that Division C is contributing profit of Rs 19600 and if it will be closed it amounts to loss of Rs.-19600.

17.7 **KEYWORDS**

Contribution Analysis is the examination of the contribution margin of products or services to assess their impact on overall profitability and guide strategic decision-making.

Make or Buy Decision is the evaluation process where a company decides whether to produce a component or service internally (make) or purchase it from an external source (buy), considering costs, expertise, and strategic goals.

Accept or Reject Decision is the evaluation of projects, investments, or business proposals to determine whether to accept (implement) or reject them based on their financial viability, potential returns, and alignment with organizational objectives.

17.8 Self Check Exercise

Short Answer Questions

1. What is the key advantage of using marginal costing for short-term decision-making?
2. Explain the significance of the contribution margin ratio in cost-volume-profit (CVP) analysis.
3. How does marginal costing treat fixed manufacturing overhead costs in product costing, and why?
4. In what scenarios might a business choose to use absorption costing over marginal costing, and vice versa?

Long Answer Questions

1. What do mean by Marginal Costing? What is its importance and its demerits?
2. What are the techniques of marginal costing and how these are practically useful in business?
3. Discuss briefly various marginal costing techniques.
4. Discuss the role of contribution margin in profit planning. How can a business utilize contribution margin analysis to optimize its pricing strategy and achieve desired profit levels?

17.9 ANSWER KEYS (Self Check Exercise)

(a) 2. Variable Costs
(b) 1. Break-even analysis
(c) True
(d) True
(e) True
(f) True

Lesson No. 18 Author: Manjit Singh

BUDGETING AND BUDGETARY CONTROL

STRUCTURE

One of the primary objectives of cost accounting is to provide information to management for planning and control. Budgetary control and standard costing are two essential tools of cost accounting which are frequently used by business executives for the purpose of planning and control.

18.1 CONCEPT OF BUDGETING

The Institute of cost and Management Accountants of England and Wales has defined the term budget as follows: *A financial and/ or quantitative statement prepared and approved prior to a defined period of time, of the policy to be pursued during that period for the purpose of attaining a given objective. It may include income, expenditure and employment of capital.

From the above definition, the main features of a budget can be identified, namely that (i) a budget may be expressed in terms of money or quantity or both (ii) it should be developed prior to the period during which it is to operate, (iii) it is set for a definite period, find (iv) before its preparation, the objective to be obtained and policy to be pursued to achieve that objective are required to be laid down. Budgeting lays emphasis on the necessity for advance decision on future course of action to be followed and point's out the results, which would accrue by following that course of action.

Budgets are, usually set up in light of past experience after taking into account the changes that are expected to occur in the future. It is therefore, to be expected that actual figures will correspond to the budget unless there is some change in the conditions. In fact it must- be the constant endeavor of the management to see that actual performance does correspond with the budgeted performance. Budgetary control help to increase efficiency and enables the concern to achieve the targets which are considered attainable.

The objects of budgeting have been summarized as follows by an American writer on the subject:

1. To encourage self study in all aspects of a company's operations.
2. To get all members of management to "put their heads* to the basic questions of how the business should be run, to make of them a coordinated team operating towards clearly defined objectives.
3. To force a definition and crystallization of the company's policies and aims.

4. To increase the effectiveness with which people and capital are employed.
5. To disclose areas of potential improvement in company operations.
6. To stimulate a study of relationship of the company to its external economic environment for improving the effectiveness of its directions.

Self Check Questions (Fill in the Blanks)

(a) The comprehensive budget that covers all financial aspects is known as the _____ budget.
(b) Budgetary control involves comparing actual results with the _____ figures to identify variances and take corrective actions.
(c) Responsibility accounting involves assigning responsibility for specific budget items to individuals or _____.

18.2 TYPES OF BUDGETS

There are various basis on which budgets may be classified. They are capacity, coverage they encompass, periods which they cover and conditions on which they are based.

Budget

Capacity	Coverage	Period	Conditions
Fixed Budgets	Flexible Budgets	Functional Budgets	Master Budgets
Long-term Budgets	Short-term Budgets	Basic Budgets	Current Budgets

18.2.1 Fixed Budget

In the words of institute of Cost and Management Accounts of England, "a fixed budget is a budget designed to remain unchanged irrespective of level of activity actually attained." Fixed budget is used as an effective tool of cost control. In case the level of activity attained is different from level of activity for budgeting purposes, the fixed budget becomes in effectives. Such a budget is quite suitable for fixed expenses.

18.2.2 Flexible Budget

In flexible budget, the difference in behaviour between fixed and variable cost is recognized in relation to fluctuations in output, or other variable factors such as number of employee and is designed to change appropriately with such fluctuations. Flexible budget is designed to change in accordance with level of activity actually attained. This budget is prepared in such a manner so as to present budgeted cost for different level of activity. It is more realistic and practicable because it gives due consideration to cost behaviour at different levels of activity. While preparing a flexible budget, the expenses are classified into three categories viz.

(i) Fixed
(ii) Variable; and
(iii) Semi Variable

These semi variable expenses are further segregated into fixed and variable expenses. Flexible budgets are generally prepared under the following conditions :

(i) In case of a new business venture due to its typical nature, it may be difficult to forecast the demand of a product accurately.
(ii) Where the business is dependent upon the much of nature e.g. person dealing in wool trade may have enough market if temperature goes below the freezing point.
(iii) In case of labour intensive industry where production of a concern is dependent upon availability of labour.

18.2.3 Functional Budget

Budgets which relates to individual functions in an organisation are known as

functional budgets. For example, purchase budget, production budget, plant utilisation budget and cash budget.

18.2.4 Master Budget

The consolidated summary of various functional budget is master budget. Generally on the basis of this master budget, budgeted profit and loss account and forecasted balance sheet are built up.

18.2.5 Long Term Budget

Budget prepared for a period longer than one year is long term budget. These types of budgets have great significance in business forecasting and planning. The main example of long term budgets are capital expenditure budget, Research and Development Budget, etc.

18.2.6 Short Term Budget

Budgets which are prepared for periods less than a year are known as short term budgets. The main example of short term budget is cash budget. Generally these types of budgets are prepared in cases where a specific action has to be immediately taken to bring any variation under control, as in case of cash budget.

18.2.7 Basic Budget

A budget which remains unaltered over a long period is called basic budget.

18.2.8 Current Budgets

A budget which is established for use over a short period of time and is related to the current conditions IS called current budget.

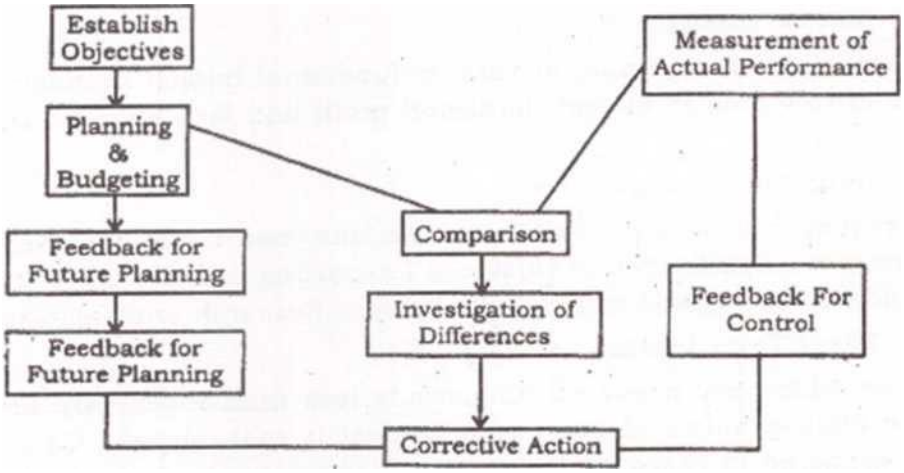
18.3 Concept of Budgetary Control

Budgetary control is a device for control in which the actual state of affairs is compared with the budget so that appropriate actions may be taken with regard to any deviation before it is too late. Budgeting is thus merely a budgetary control. The institute of Cost and Management Accounts, of England and Wales defines “budgetary control as the establishment of budget relating to responsibilities of executives to the requirements of a policy, and the continuous comparison of actual with budgetary results either to secure by individual action the objective of that policy or to provide a base for its revision.''

If follows that a budgetary control system secures control over performance and related costs in different parts of a business (i) by establishing budgets, (ii) by comparing*actual attainments against the budgets, and (iii) by taking corrective action and remedial measures or revision of budgets if necessary. Thus in a system of budgetary control, the budgets put the plan in concrete form and follow up action is taken to see that plan.is adhered to i.e. actual do not exceed the budget.

In brief, it is a system to assist management in the allocation of responsibility and authority to Provide it with and for making, estimating and planning, for the future and to facilitate the analysis of variation between estimated and actual performance. In order to ensure that the system of budgetary control may function effectively, it is necessary that concern should develop proper basis of measurement of standards with which to evaluate efficiency of operations i.e. it should have installed a good system of standard costing. Besides the organization of the concern should be so integrated that all lines of authority and responsibilities are laid, allocated and defined. Another important thing about :he system of budgetary control is that this system assumes that functions and responsibilities are separated and this requires that organization shall be planned, in such a manner that every one, from managing director down to shop foreman will have his duties properly defined.

BUDGETARY CONTROL PROCES8



A diagrammatic presentation of the budgeting and budgetary control process, as a financial control technique, would be helpful in understanding its significance.

18.4 BUDGET MANUAL

A budget manual lays down the details of the organisational set up, the routine procedures and programmer to be followed for developing budgets for various items & the duties & responsibilities of the executives regarding the operation of the budgetary control system. It is a written document which guides the executives in preparing various budgets. The manual is divided into separate section so that each manager can be issued only that section appropriate to his waste and responsibilities.

18.4.1 Advantages of Budget Manual are as follows

(i) Every person knows in writing that what is his role. What is to be done and how it is done.

(ii) As every thing is in writing nothing can be avoided.

(iii) Every objective in the budget is communicated for early guidance and information.

18.5 Objectives of Budgetary Control System •

The system of budgetary control have following objectives:

(i) The main objective is to portray the overall aims of the business, with precision and determining target performance of each section or department of the business.

(ii) To fix up the responsibilities of each of the executives and other personnel so that every one knows what is expected of him and how he will be judged. It is only through budgetary control whereby objective assessment of executives of departments is possible.

(iii) To ensure that best use of all available resources to maximise profit or production is made subject to the limiting factors. Since budget cannot be properly drawn up without considering all aspects:, usually there is good co-ordination when a system of budgetary control operates.

(iv) To provide a basis for comparison of performance actually with the predetermined targets and investigation of deviation, if any This helps in adopting corrective measures.

(v) To co-ordinate the various activities of the business and centralising control and yet enabling management of decentralise responsibility and delegate authority in overall interest of the business.

(vi) To provide a basis for revision of current and future policies.

(vii) To draw up long range plans with fair measure of accuracy.

(viii) To provide a yardstick against which actual results can be compared.

18.6 Organisation for Budgetary Control System

The working for the system of budgetary control is done through budget committee which operates through budget officer. And the budget committee is responsible for successfully introducing and implementing budgetary control system. The budget committee would be composed of all the functional heads and a member from board to preside over and guide the deliberations. The main responsibilities of the budget officer are :

(i) To provide assistance in preparation of various budgets by co-ordinating the work of the accounts department, which is normally responsible to compile the budgets, with the relevant functional department like sales, production, plant maintenance etc.

(ii) To provide the individuals with budgets who are responsible for the achievements of these budgets and to guide them in overcoming any practical difficulties in its working.

(iii) The budget officer is also responsible for the preparation of periodical budget reports and to circulate them to the individual concerned.

(iv) The follow up action to be taken on the budget reports is also the responsibility of budget officer.

(v) To prepare an overall budget working report for discussion at budget committee.

(vi) To prepare periodical reports for board meetings. Comparing the budgeted profit and loss account and balance sheet with the actual results attained.

And finally the budget officer should make it sure that before any budget is to be finalised, it should be thoroughly discussed with the functional head. The efficiency of the budget officer and through him of the budget committee, will be judged more by smooth working of the system and agreement between actual figures and budget figures. Basically these budgets are an incentive and a challenge for better performance. It is upto the budget officer to see that attention of the different functional heads are drawn to face the challenge in a successful manner.

18.7 Essentials of a good Budgetary Control System

(i) Flexible/Variable Budgeting: The modern concept of budgetary control is that such control shall be flexible and this is obtained by what is known as 'the operation of the variable.*

(ii) Team work: The fundamental requirement of a system of budgetary control is the cooperation of all levels of members of the company.

(iii) The Budget Period: The budget must be prepared according to the appropriate period of time, as nature of business required e.g. one year, quarterly, monthly, seasonal etc.

(iv) Identical Classification Codes and Heading: For budgeting, accounting and costing to be meaningful, it is important that an identical scheme of classifying codes and heading is adopted.

(v) Periodic control Statements: For implementing system of budgetary control, it is again necessary that control statements are submitted periodically.

(vi) Interlock Budgets to provide integration in Budgeting system.

(vii) Delegation of Responsibility is required to trace costs to the managers who are primarily responsible for taking decision regarding cost.

Self Check Question (Fill in the Blanks)

(d) Continuous improvement in budgetary control involves using feedback from the control process to _____ future budgets and performance.

(e) Setting benchmarks for performance is a key step in the _____ phase of budgetary control.

(f) Budgeting helps in efficient distribution of _____ by prioritizing financial needs.

18.8 Budgetary Control Reports

The evaluation of performance and reporting on the deviations is an integral part of the control system. So the establishment of budgets is in itself of no use unless a comparison is made regularly between actual expenditure and the budgets allowances and properreporting of the results is made to the management. The daily/weekly/monthly reports depending upon the nature of operations involved on results of various functions are regularly submitted to management and follow up action to be taken immediately.The report should be prepared in a systematic manner in such a way that .hey reveal the responsibility of a department or an executive and give full reason for any variance so the proper corrective action could be taken. Another important thing here is that both favourable and unfavourable variances should be shown and commented upon.

In this respect, the budget reports showing comparison between actual and budgeted expenditure should be presented in tabular form as given below:

Department Budget Report Period

Expenses	Difference				
	Budget Rs.	Actual Rs.	Increase Rs.	Decrease Rs.	Reason
Controllable expenses Repair to Tools General Shop labour Machine maintenance ' Power and lighting Repairs to machinery Sundry shop stores Lubricants Non-controllable expenses Floor space expenses Plant Depreciation General product overhead Total					

Fig: Budget Report for Expenses Revision of Budgets :

It is necessary to revise the budget from time to time in order to fit them with changing business conditions. The budgets may be revised under following circumstances:

(i) When external factors change i.e. changes in wage rates, prices of materials, fixed assets etc.

(ii) When additional expenditures is required to meet some contingencies. If this additional expenditure is of temporary nature, normal budgets may be reverted to as soon as the contingency is over.

The procedure to be followed for the revision of budgets is the same as followed for setting up for normal budgets. The changed circumstances are considered and the budgets are adjusted accordingly and the final sanction is accorded for revision by appropriate authority.

18.9 Illustration :

The cost of an article at a capacity level of 10,000 units is given under A below. For a variation in capacity above or below this level, the individual expenses vary as indicated in B below:

	(Rs.) A	(Rs.) B
Material Cost	50,000	100% varying

Labour Cost	30.000	100% varying
Power	30.000	80% varying
Repair & Maintenance	3.500	80% varying
Stores	,000	100% varying
Inspection	800	25% varying
Depreciation	10.0 3	100% varying
Adm. Overheads	,600	25% varying
Selling Overheads	4.500	50% varying
Total Cost	1,07,400	
Cost per unit	10.74	

Find out the unit cost of the product under each individual expense at production levels of 18,000 units and 12,000 units.

Solution

FLEXIBLE BUDGET

Output (Units)	8,000	10,000	12,000
	(Rs.)	(Rs.)	(Rs.)
Material Cost	40,000	50,000	60,000
Labour Cost	24,000	30,000	36,000
Price Cost	64,000	80,000	96,000
Factory Overheads :	1,920	2,400	2,880
Power : Variable			
Fixed	600	600	600
Repair & Maintenance	2,240	2,800	3,360
Variable			
Fixed	700	700	700
Stores : Variable	1,600	2,000	2,400
Inspection : Variable	160	200	240
Fixed	600	600	600
Depreciation : Variable	8,000	10,000	12,000
Works Cost	79,820	99,300	1,18,780
Administrative Overheads :	720	900	1,080
Variable			
Fixed	2,700	2,700	2,700 *
Cost of Production :	83,240	1,02,900	1,22,560
Selling Overheads :	1,800	2,250	2,700
Variable			
Fixed	2,250	2,250	2,250
Total Cost	87,290	1,07,400	1,27,510
	+8,000	+ 10,000	+ 12,000
Cost per Unit	Rs. 10.91	Rs. 10.74	Rs. 10.60

18.10 KEYWORDS

Budgeting: The systematic process of creating a financial plan that outlines expected income, expenses, and savings for a specific period.

Master Budget: An all-encompassing financial plan that provides an overview of an organization's budgeted financial statements and operating budgets.

Operating Budgets: Detailed plans that focus on day-to-day operations, covering areas such as sales, production, and labor costs.

Financial Budgets: Plans that address an organization's financial position and cash flow, including components like the balance sheet and cash budget.

Budgetary Control: The process of comparing actual financial results with budgeted figures to identify variances and take corrective actions.

18.11 Self Check Exercise

Short Answer Questions

1. What is the primary purpose of budgeting?
2. Define variance analysis in the context of budgetary control.
3. Briefly explain the concept of responsibility accounting.
4. What are the main components of financial budgets?
5. Why is continuous improvement important in the context of budgetary control?
6. In budgeting, what does the term "setting standards" refer to?

Long Answer Questions

1. Discuss the significance of budgeting in effective financial management, emphasizing its role in goal setting and resource allocation.
2. Explore the practical applications and benefits of variance analysis in the context of budgetary control, illustrating how organizations can use this tool for financial management.
3. Examine the concept of responsibility accounting and its impact on organizational structure, accountability, and overall performance evaluation.
4. Analyze the different types of operating budgets, providing insights into how they contribute to the day-to-day operations and strategic planning of businesses.
5. Evaluate the importance of financial budgets, such as the balance sheet and cash budget, in providing a comprehensive view of an organization's financial position and facilitating effective decision-making.

18.12 ANSWER KEYS (Self Check Exercise)

(a) Master
(b) Budgeted
(c) Departments
(d) revise
(e) Setting Standards
(f) Funds

Lesson No. 19 Author: Shallu Jain

ZERO BASED BUDGETING

INTRODUCTION 19.1.1 Zero Based Budgeting

Traditionally previous year's figures are taken as "Basi" to which necessary adjustment are made for impact of inflation, proposed increase in level of activity; In this way Budget figures are obtain by adding some percentage to the previous year figures. But traditional method fails to comply with the changed circumstances of business. To solve these problems come before traditional method new concepts of budgeting developed and ZBB is one of them.

19.1.2 Concept of ZBB

The concept of ZBB is new of recent development. Father of ZBB Peter. A Pyhrr defined ZBB as an operating planning a budgeting process, which requires each manager to justify his entire budget request in detail from scratch and shift the burden of proof to each manager to justify why he should spend any money at all.

In simple words it is a formalized system of budgeting for the activities of an enterprise as if each activity were being performed for the first time. With careful consideration of activities, it is thus a technique which is originally devised to help management in the difficult task of allocating limited resources more efficiency between project and other cost items. The established activities will have to be compared with alternative application of the resources that they would use during the budgetary planning period. The basic requirements for application of ZBB are as follows :

1. These must have a budgeting system within the organization.
2. It requires manager to develop qualitative measures for use in performance evaluation.

ZBB is based on the premise that every rupee of expenditure requires justification. The traditional budgeting approach include expenditure of previous year which are automatically incorporated in new budget proposals and only increments are subjected to debate. ZBB assumes that responsibility centre manager has had no previous expenditure.

19.1.3 Features of ZBB

Important features of ZBB are:

— Concentration of efforts is not simply of 'how much' a unit will spend but 'why' it needs to spend.
— Choices are made on the basis of what each unit can offer for a specific cost. Individual unit objects are linked to corporate targets.
— Quick budget adjustments can be made if during the operating year costs are required to maintain expenditure level.

19.1.4 Difference Between Traditional Budgeting and ZBB

The points of difference between traditional budgeting and ZBB are as follows:

— Traditional budgeting is accounting-oriented. Main stress happens to be on previous level of expenditure. ZBB makes a decision oriented approach. In traditional budgeting, first reference is made to past level of spending and then demand is made for inflation and new programme. In ZBB a decision unit is broken into understandable decision packages which are ranked according to importance to enable top management to focus attention, only or. decision packages which enjoy priority to others.

— In traditional budgeting, some managers deliberately inflate their budget request so that after the cuts they still get what they want. In ZBB, a rational analysis of budget proposal is attempted.

— Traditional budgeting in not as clear and responsive as ZBB.

— In traditional budgeting, it is for top management to decide why particular amount should be spend on a particular decision unit. In ZBB their responsibility is shifted from top management to the manager of decision unit.

— Traditional budgeting makes a routing approach while ZBB makes a very straight-forward approach and immediately spotlights the decision packages enjoying priority over others.

Self Check Questions

(a) What is the primary focus of zero-based budgeting (ZBB)?

(b) Zero-based budgeting is most effective for organizations aiming to:

(c) What does the term "baseline" refer to in the context of zero-based budgeting?

(d) In zero-based budgeting, what is the emphasis when justifying expenses?

19.1.5 Implementations of ZBB

The arguments in favour of implementation of ZBB are :

— In course of ZBB process, inefficient aid obsolete operations are identified and removed.

— It is a planning tool for management which helps identification of wasteful and obsolescent items of expenditure.

— ZBB is not based on incremental approach, so it promotes operational efficiency because it requires manager to review and justify their activities or the funds requested.

— Since this system requires participation of all managers in preparation of budgets, responsibility of all levels of management in successful execution of budgetary system can be ensured.

Thus, ZBB affords a choice the amongst alternatives so that activities would be selected in the order of their importance. ZBB results in saving money from inefficient activities and diverting it to efficient activities with the help of the following procedure:

- 1. Identifying the decision units in an organization.
  2. Listing the activities, programmes or other functions of each decision unit.
  3. Spelling out the goals of the activities of each decision unit.
  4. Identifying and evaluating alternative methods of achieving the objectives and

goals of each activity.

5. Designing decision packages. A decision package is a document which identifies and describes the specific activity in such a way that management can evaluate it, and rank it in order of priority against their activities.
6. Evaluating each decision-package and ranking it by cost-benefit analysis.
7. Allocating resources in the budget according to the fund available and the evaluation and ranking of the comparing packages. The alternative which promises? To the objective defined should be selected. Packages involving small expenditure can be dealt with the junior managers, but senior managers must take decision involving large amount of expenditure. The ZBB process must, however run through the entire management structure.

19.1.6 Advantages of Zero Base Budgeting

1. It presents clearly the purpose and goals for which funds are required.
2. It gives better appreciation of budgeting by legislature:
3. It strengthen budget formulation process.
4. It makes reliable and accountability of the executives.
5. Part Inefficiencies are not repeated in ZBB.
6. With ZBB management got opportunity to get critical appraisal of its activities.
7. It helps in making optimum allocation of *scarce* resource.
8. Coordination within the firm is improved and communication channels are strengthened.
9. ZBB is particularly useful for service departments & Governments.
10. ZBB is particularly useful for service departments & Governments.

Self Check Exercise

(e) Which of the following is a key characteristic of zero-based budgeting?

1. Predictive budgeting
2. Focuses only on fixed costs
3. Requires a detailed review of all expenses
4. Ignores cost-consciousness

19.1.7 The criticism against ZBB

The ZBB has severally criticised on the following grounds :

— ZBB will lead to an enormous increase in paper work created by the decision packages. The assumptions about costs and benefits in each package must be continually updated, and new packages developed as soon as new activities emerge.

— ZBB is criticized for emphasis of short-term benefits to the determinant of longterm benefits.

— ZBB may encourage the false idea that all decisions have to be made in the budget. Management must be able to meet unforeseen opportunities and threats in all times and must not be restricted from carrying out new ideas simply because they were not approved by a decision package cost benefit and ranking analysis.

— Where objectives are very difficult to quantity as in research and development or general administration, ZBB does not offer any significant control advantage. Defining the decision units and decision packages is the difficulty encountered by companies introducing ZBB.

— Another problem with ZBB is the difficulty of the ranking process. Managers face the following three common problems :

(i) The large number of packages they have to rank.

(ii) There is often a conceptual difficulty in having to rank packages which they regard as being equally vital, for legal or operational reasons.

(iii) It is difficult to rank completely different types of activity, especially where activities have qualitative rather than quantitative benefits, such as spending on staff welfare and working conditions, where ranking must equally be entirely subjective.

19.2 KEYWORDS

Zero-Based Budgeting (ZBB): A budgeting approach that requires justification for every expense, starting the budgeting process from scratch.

Baseline: The starting point for budgeting in zero-based budgeting, representing the initial justification for all expenses.

Cost-Consciousness: A key advantage of zero-based budgeting, emphasizing a thorough review and justification of all costs.

Incremental Budgeting: A contrast to zero-based budgeting, this approach involves adjusting previous budgets based on incremental changes.

Resource Optimization: A goal of zero-based budgeting, focusing on efficiently allocating resources by justifying each expense from zero.

Justification: The central principle of zero-based budgeting, requiring a detailed rationale for each expense, irrespective of previous budgets.

19.3 Self Check Exercise

Short Answer Questions

1. Define Zero-Based Budgeting (ZBB) and briefly explain its fundamental principle.
2. What distinguishes Zero-Based Budgeting from traditional budgeting methods? Provide a concise comparison.
3. Explain the significance of decision packages in the context of Zero-Based Budgeting.
4. Identify one advantage and one challenge associated with implementing Zero-Based Budgeting in an organization.
5. How does Zero-Based Budgeting contribute to cost transparency and accountability? Briefly describe the mechanism.

Long Answer Questions

1. Explain the concept of zero-based budgeting and how it differs from incremental budgeting.
2. What are the potential benefits of implementing zero-based budgeting in an organization? Provide specific examples.
3. Discuss the challenges associated with the implementation of zero-based budgeting and how organizations can overcome them.
4. How does zero-based budgeting contribute to cost-consciousness and efficient resource allocation?
5. In what situations would zero-based budgeting be more suitable than other budgeting approaches?

19.4 ANSWER KEYS (Self Check Exercise)

(a) Starting from scratch
(b) Cut costs and optimize resources
(c) The starting point for budgeting
(d) Starting from scratch for each expense
(e) Requires a detailed review of all expenses

MBA-CC (First Year)
Semester-I

AFM 105
ACCOUNTING FOR MANAGEMENT

Lesson No. 20

Author: Ms.Harpreet Kaur

RESPONSIBILITY ACCOUNTING

STRUCTURE

20.1 Introduction

Cash accounting is required to serve three major objectives:

(1) Cost determination for product or services
(2) Valuation of inventory and
(3) Cost control

The first two objectives are well versed by costing system of most companies but the third objective of cost control is not achieved because in costing system the emphasis is on the devices of control and not on those who use such devices. It would be easy for company to control cost effectively when it evolves a system of placing responsibilities for the incurrence of costs of those who have authority to influence them. Such a system which identifies costs with responsible persons is called responsibility accounting. In other words, responsibility accounting is a system of control where responsibility is assigned for the control of costs. The persons are made responsible for the control of costs. Proper authority is given to persons so that they are able to keep up their performance. In case the performance is not according to predetermined standards then the persons who are assigned this duty will be personally responsible for it. In responsibility accounting the emphasis is on men rather than on system.

According to David Fanning, "Responsibility accounting is a system or mechanism for controlling the wider freedom of action, that executive decision centre manages in other words are given by senior management and holding those executives responsible for the consequences of their decisions.* In this definition, Responsibility accounting is used as a controlling device by top management of different activity centres are responsible for controlling the costs of their centers. Information about costs incurred for different activities is supplied to the persons in charge of various centers. The performance is constantly compared to the standards set and this process is very useful in exercising cost controls. Responsibility accounting is different from cost accounting in the sense that the first lays emphasis on cost control whereas the latter lays emphasis on the cost ascertainment.

20.2 Fundamental aspects of responsibility accounting

implementing the plans is communicated to each level of management.

2. Inputs and Output or Cost and Revenues

The implementation and maintenance of responsibility accounting system is based upon information relating to inputs and outputs. These inputs expressed in the monetary terms are known as costs. Similarly, outputs expressed in monetary terms are calls revenues. Thus, responsibility accounting is based on cost and renew information.

3. Relationship between organization structure and Responsibility Accounting System A said organization with clear-cut lines authority responsibility relation is a prerequisite for establishing a successful responsibility accounting system. In fact, responsibility accounting system should parallel the organization structure and provide financial information to evaluate actual results of each individual responsible of a function.

4. Transfer Pricing Policy

The significance of transfer price can be judged from the fact for the transferring division it will be a source of revenue whereas for the division to which transfer is made it will be an element of cost.

5. Participative Management

The function of responsibility accounting system becomes more effective if participative and democratic styles of management are followed, wherein, the plans are laid of budgets/ standards, are fired according to the mutual consent and the decisions reached after consulting the subordinates.

6. Management by exception

It is a well accepted fact that at successive high level of management in the organational chain less and less time is devoted to control more and more to planning.

7. Human Aspect of Responsibility Accounting

The aim of responsibility accounting is not place blame. It should not be taken as advice to punish subordinates. The best responsibility system enlightens employees about the positive side of control. To ensure the success of responsibility accounting system. It must look into the human aspect also by considering needs of subordinates. Developing mutual interests, providing information.

8. Identification of Responsibility Centre

A responsibility centre is under the control of an individual who is responsible for the control of activities of that sub-unit of the organisation. This responsibility centre may be a very small unit of the organisation as an individual could be made responsible for are machine used in manufacturing operation or it may be very big division of the organisation, such as a individual manager could be responsible for achieving a certain levelof profit from the division & investment under his control.

9. Assigning Cost to Individuals& limiting their efforts to Controllable Costs

If the person has authority over both the acquisition & use of the sewichthe should be charged with the cost of these sewich. If the person can significantly influence the amount of cost through his own action he may be charged with such costs. Even if the person cannot significantly influence the amount of cost through his own direct actions he may be charged with these elements with which the management desires him to be concerned so what he will help to influence there were are responsible.

20.3 Nature of Responsibility Accounting

A number of factors have contributed to the development and growing use of responsibility accounting by enterprises of all sizes and characteristics. The rapid pace of

technological and marketing innovation, diversification and merger strategies, high gestation period, increasing business operation in the past. The complexity of business operation accentuated a need for decentralization-dividing organization into units with independent authority and responsibility. However, decentralization could be effective if there existed a sound-control a system which could pinpoint responsible individuals accountability for performing duties. Further management realised the obvious role of planning and control process for increased productivity at minimum cost. It was also felt that tools available to per form planning and control functions that time were not efficient. Management was thus forced for searching better means of managing complex business operations. Management required the accounting system an important information system to be oriented to its information requirements. In response, responsibility accounting system was evolved.

Responsibility accounting system of an enterprise is tuned to its organization structure. It integrates accounting, budgeting and reporting techniques and devetails them to organization structure and responsibilities. The emphasis of responsibility accounting is on control unlike the productcosting methods which focuses on goods and services. The central figure of responsibility accounting is people. Although there is difference of emphasis between responsibility and product methods, yet they are equally desirable. Costs need to be accumulated goods or services. However, there is need to emphasise responsibility centers for control purposes can be easily recast for product costing purposes. This contrary is not true. Costs accumulated for product costing. Responsibility accountings is an important information system. It reports information on actual and planned performances, with variances, to managers at. a time when they need it for effective control and improved future performance.

One important characteristic of responsibility accounting is that, since it focuses on people, it has a behavioural aspect. It influences human behaviour and motivation. This dimension should be fully understood by management while introduction responsibility accounting and using it as a means of motivation.

20.4 Steps involved in Responsibility Accounting

Responsibility Accounting is used as a control device. The aim of responsibility accounting is to help management in achieving organization goals.

The following steps are involved in responsibility accounting :

1. The organization is divided into various responsibility centres. Each responsibility centre is put under the charge of a responsibility centre so that he may be able to give full information about his department. The goals of the responsibility centres are properly communicated to the managers.
2. The actual performance of each responsibility centre is recorded and communicated tq thee executive concerned and the actual performance is compared with, the goals set and it helps in assessing the work of these centres.
3. If the actual performance of a department is less than the standard set, then the variances are conveyed to the top management. The names of those persons who were responsible for that performance are also conveyed so that responsibility may be fixed.
4. Timely action is taken to take necessary corrective measures so that the work does not suffer in future. The direction of the top level management are communicated to the concerned responsibility centre so that corrective measures are initiated at

the earliest.

The purpose of all these steps is to assign responsibility to different individuals so that their performance is improved. In case the performance is not upto the targets set then responsibility may be fixed for it. Responsibility accounting will certainly act as control device and it will help in improving the overall performance of the business.

20.5 Requirements of Effective Responsibility Accounting

Responsible accounting can be used by all kinds of business- small or large, private or public, manufacturing or non-manufacturing. However, it can succeed only when an enterprise is prepared for it. It needs a change in attitude and well knit organization. Following are some of the important requirements of an effective responsibility accounting system:

- A sound organization structure with defined authority and responsibility should exist.
- The organization should be divided into units, i.e., responsibility centers should be created.
- Accurate and acceptable budgets with full participation of concerned managers should be developed.
- Responsibility accounting should have the top management support.
- It should be supported and understood by managers.
- A healthy organization environment and progressive management attitude should exist.

20.6 Responsibility Centres

A small firm may possible be managed by an individual or a small group of people. But the activities of a large firm are difficult to be supervised by an individual or a few individuals. For effective control of its activities a large firm is divided into meaningful segments (units) divisions, departments and so on. Each unit has certain activities to perform, its manager is assigned specific authority and responsibility to ^carry out those activities and is held responsible for his actions and decisions affecting those activities. The units of an enterprise for the purpose of control are called responsibility centre or decision centres. A responsibility centre is a unit of an organization under the supervision of a manager who has the responsibility for the activities of that responsibility centre. The responsibility centre manager may have a big unit, such production department.

The basic characteristic of responsibility centre is that each of them uses input labour and services-to produce outputs-goods or services. The goods or services so produced will either be transferred to other responsibility centres to act as their inputs, or will be sold to outside customers. Inputs of responsibility centres are measured as costs. A common denominator money is used to measure inputs expressed in various physical units. The money value of inputs consumed in a responsibility centre is. called cost. Output of responsibility centres are , measured as revenues when goods or services are sold to outside customers. The monetary measure of output is difficult to estimate if output is used within the organization. To overcome this, management should lay down its transfer pricing' policy. Responsibility centers for planning and control purposes, are classified into three classes:

(a) Cost Centres
(b) Profit Centres
(c) Investment Centres

(a) Cost Centres

A responsibility centre is called a cost centre when manager is held accountable only for costs incurred. Output of cost centres are not measured in monetary terms. Many centres in organisation produce services which cannot be measured in monetary terms. For example, the contribution of accounting department or legal department cannot be measured in monetary terms, so we will call it as cost centre, costs are the primary planning and control data is cost centres, a manager is not responsible for profit (revenue) and investment in assets. The performance of the responsibility centre manager is evaluated by comparing the costs incurred with the budgeted costs. Management focuses its attention on cost variances for control purposes.

(b) Profit Centres

A responsibility centre is called a profit centre when the manager is helc responsible for both costs (inputs) and revenues (outputs) and thus for profits. In profit centre both inputs and outputs are capable of measurement in financial terms. The difference between revenue earned and cost incurred will be profits. The output of a centre may be undertaken either for outside customers or for other responsibility centres in the same organization, when the output is meant for outsiders, then the revenue will be measured from the price charged from customers. If the output is meant for other responsibility centres, then management takes a decision whether to treat the centre as profit centre or not. As if a business has a number of processes and the output of the one process is transferred to next process. When the transfer profit centre. Internal transfers at profit do not increase company's assets whereas sales to outside will increase assets of the company in the shape of cash, debtors, bill of exchange etc. The income statement of a profit centre is used as a control device. The profits of a responsibility centre will enable in evaluation the performance of the manager of the centre.

(c) Investment Centres

A responsibility centre is called an investment centre, when its manager is responsible for costs and revenue as well as for the investment is assets used by his centre. In the investment centre, performance is assessed not by profit alone, rather profit *is* related to investment employed. The manager of investment centre is required to earn a satisfactory return. Thus, return on investment (ROI) is used as the performance evaluation criterion in an investment centre. Sometimes, investment centres may be treated as separate firms where the manager has overall responsibility of managinginputs, output and investment. It is, therefore, the ultimate extension of responsibility idea.

The manager of a responsibility centre is made responsibility for properly utilizing the assets in his centre. He is expected to earn a fair return on the amount employed in assets in his centre. Measurement of assets employed poses many problems. It becomes difficult to determine the amount of assets employed in a particular responsibility centre. Some assets may be used by two or more, 'responsibility centres. Investment centres may be used for big responsibility centres where assets will be exclusive possession of that centre.

20.7 Reporting under Responsibility Accounting

Reporting aims at informing each manager of his achievement in controlling costs of his centre and motivating them to take remedial action for improved future performance. That is why we say that performance reporting is an integral part of responsibility accounting.

While preparing the performance reports, manager should emphasize on someimportant aspects like the detail to be covered in report depend upon the level of management for which reports are being prepared. First line managers would report the detail and more frequently, while managers at higher level would require condensed reports and not too frequent.

Self Check Exercise

(a) In responsibility accounting, what is a cost center primarily accountable for?
(b) What is the main objective of a profit center in responsibility accounting?
(c) How does a responsibility accounting system contribute to decentralized decision-making?
(d) What is the primary focus of an investment center in responsibility accounting?

20.8 Advantages of Responsibility Accounting

Who are incharge of various cost centres. Their performance is compared with the targets set for them and proper action is taken for variances, if any. Following are the advantages of Responsibility Accounting:

1. Assigning of Responsibility

Some kind of responsibility is assigned to each and every individual in the organization. So everybody knows what is expected of him. The responsibility of individual can easily be identified satisfactory and unsatisfactory performances of various persons are known. No person can shift his responsibility to any other person in case of some fault because under this system responsibility is assigned individually.

2. Improved Performance

When some task is assigned to a specific person it acts as a motivating factor. The persons who are incharge for different activities know that their performance will be reported to the top management. So they try to improve their performance. On the other hand, it acts as a determinant for low performance also because persons know that they are accountable for their work and they will have to clear it if there is any lack in the performance.

3. Helpful in Decision Making

Being a control device to management responsibility accounting also help in decision making. The information collected under this system is helpful to management in planning for its future actions.

4. Delegation and Control

In this system, responsibility is delegated but overall control lies with management. Authority is delegated to the responsible persons by management according to the requirements of the task assigned. On the other hand, responsibility of various persons is fixed which is helpful in controlling their work, so the control remains with top management because the performance is reported to it.

5. Helpful in Cost Planning

Under this system of responsibility accounting full information is collected about costs and revenues. This data is helpful in Planning for future costs and revenues, fixing standards and preparing budgets.

20.9 **KEYWORDS**

Responsibility Accounting: A management control system that evaluates individual and departmental performance based on specific areas of responsibility.

Cost Center: A segment of an organization responsible for controlling costs, without direct accountability for generating revenue.

Profit Center: A segment of an organization responsible for both controlling costs and maximizing sales revenue.

Variance Analysis: The process of identifying and analyzing differences between budgeted and actual performance.

Investment Center: A segment of an organization responsible for maximizing return on investment and managing both costs and revenue.

Decentralized Decision-Making: Distributing decision-making authority to individual responsibility centers within an organization.

20.10 Self Check Exercise

Short Answer Questions

1. Define responsibility accounting and explain its role in organizational management.
2. Differentiate between a cost center and a profit center in responsibility accounting, highlighting their primary objectives.
3. Describe the concept of a responsibility center and provide examples of different types of responsibility centers.
4. Explain how a responsibility accounting system contributes to performance evaluation and decision-making within an organization.
5. Discuss the importance of variance analysis in responsibility accounting and how it helps in performance improvement.

Long Answer Questions

1. Define Responsibility accounting and give its essential features.
2. Give the steps involved in Responsibility Accounting and various Responsibility centres.
3. Examine the challenges organizations might face when transitioning to a responsibility accounting system and propose strategies for overcoming these challenges.
4. Evaluate the impact of responsibility accounting on organizational decision-making processes and the overall management structure.

20.11 ANSWERS KEYS (Self Check Exercise)

(a) Controlling Costs

(b) Maximizing sales revenue

(c) Distributing decision-making authority to individual responsibility centers

(d) Maximizing return on investment

Lesson No. 21

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STANDARD COSTING

STRUCTURE

21.1 THE CONCEPT OF STANDARD COSTING

One of the objectives of cost accounting is cost ascertainment which is historical in nature, alternatively costs may be ascertained before production begins. As such distinguished from the historical costs, standard Costs are predetermined costs. 'Standard Costs' represent planned costs of production.

Pre determined costs based on scientific basis result in standard costs with which the actual costs may be compared to measure the extent of variations. These variations between the predetermined and actual costs, from the basis of management review to ascertain the causes of such differences so that inefficiency and waste may be eliminated as *far* as possible.

Cost control, leading to cost reduction should always be the main objective of the business. The philosophy of standard costing is to set target costs, then try to achieve those targets, to compare the actual cost with the targets, to ascertain the reasons in the books of accounts, or if a regular record is not maintained at least to bring the monetary effects of various factors that have operated in the firm to the notice of the management. Standard costing is thus a system of control of costs and measuring efficiency and of improving upon them.

Standard costing is a technique which is complementary to the actual costing or historical costing system. Standard costs serve as yardsticks against which actual costs are compared to know the reasons of inefficiencies. So, actual costing system cannot be ignored even if standard costing system is adopted.

21.2 Definition

Standard costs are scientifically predetermined costs of manufacturing a single unit of number units of product, they are target costs, costs that should be attained. These are computed in advance of production on the basis of specification of all the factors affecting costs. As such, standard costs may be distinguished from historical costs which are computed at or after the completion of production of goods to that cost figures have value only from a historical point of view. These historical cost figures, if properly analysed, may be meaningful for future decision-making, but they cannot be used to measure and control performance, because the inefficiencies and errors in production are not brought out until after the damage has ben done. Thus, with a view to detect waste and inefficiencies in time and at their course, cost analysis requires the use of

Standard cost is a predetermined cost. It is a determination in advance of production, of what should be the cost. When standard costs are used for the purposes of cost-control, the technique is known as the standard costing. The costing terminology of Chartered Institute of Management Accountants, London defines standard cost and standard costing as follows:

Standard Cost is the predetermined 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.

A standard cost has been defined by the Chartered Institute of Management Accountants, London as follows:

'A predetermined calculation of how much costs should be under specified working conditions.'

It is built up from an assessment of the values of cost elements and correlates technical specifications and the quantification of materials, labour and other costs to the prices and/or wages rates expected to apply during the period in which the standard cost is intended to be used. Its main purpose is to provide basis for control through variance accounting for the valuation of stock and work-in-progress and in some cases, "for fixing selling prices."

I. C.W.A. (London) defines standard cost as an estimated cost prepared in advance of production of supply, correlating a technical specification of materials and labour to the prices and wages rates estimated for a selected period of time, with an addition of the appointment of over head expenses estimated for the same period within a prescribed set up working conditions.* The predetermined standard, embodies in a standard cost system are those for productive output and cost elements like materials, labour and overhead, (indirect expenses). It may be emphasised that the standard costs are not mere averages. These are set with due care after observation and analysis of production activities as well as the internal and external constraints in the past and the present, as also these expected to prevail in the future period for which standards are being set.

Standard Costing is the preparation of standard costs and applying them *to* measure the variations from standard costs and analysing the causes of variations with a view to maintain maximum efficiency in production.

From the definition given above, it is clear that the technique of standard costing may comprise:

(i) Ascertainment of standard costs under each element of cost i.e. material, labour and overhead.

(ii) Measurement of actual costs.

(iii) Comparison of the actual costs with the standard costs to find out the variances.

(iv) Analysis of variances for the purpose of an assignment of reasons of variances for taking the appropriate action.

Process of setting standards and standard costs
Engineering department releases drawing to

Manufacturing department Tools and layout	Production Control Specification	Purchasing Quotations	Operating Standard time and methods	Accounting Department Accounting Information

Standard cost committee calculates
Standard material cost Standard
labour cost Application of proper
overheads Application of Normal
allowances Result : Standard Cost

Budget Committee Selling Price and
Production

Sale Department	Manufacturing Divisions	Estimating Department	Accounting Costing and Variances	Department Computing

21.3 ESTABLISHMENT OF STANDARD COSTING

The standard-setting and budget-setting process in organisation should be primarily the responsibility of the line personnel directly involved. As such, it is necessary that the business unit be so organised that departments are properly designated and lines of authority clearly defined. Establishment of cost centres is quite helpful in this regard. I.C.W.A. (London) defines a cost centre as 'a location, person or item of equipment (or group of these for which costs may be ascertained and used for the purposes of cost control.* Here no doubt, should be left as to the person responsible for each cost centre. In many instances, functional departments will form natural cost centres, but it is possible that there might be a number of cost centres in a department.

Another factor facilitating the establishment of standard costing of classification of accounts in order to facilitate collection and analysis of data. Responsibility for setting standards standard costing depends upon the reliability of standards.

While setting cost standards, the following preliminaries should be considered:

(a) Study of the technical and operational aspects of the concern, such as methods of manufacture and the process involved, management organisation and line of assignment of responsibilities, division of the organisation into cost centres, units of measurement of input and output, anticipation of wastes, rejections and losses,

expected efficiency and capacity likely to be utilized.

(b) Review of the existing costing system and the cost records and forms in use.

(c) The type of standard to be used, i.e. whether current, basic, or normal standard costs are to be set. (The various types of standards used are discussed in the following section). The choice of a particular type of standard will depend upon two factors, viz. which type would be most effective for cost control in the organisation, and whether the standards will be merged in the accounting system or kept outside the accounts as statistical data.

(d) Proper classification of the accounts so that variances; may be determined in the manner desired.

(e) Fixation of responsibility for setting standards. As definite responsibility for variances from standards is ultimately to be laid on individuals or departments. It is but natural that all those individuals or departments should be associated with the setting of standards. A standards committee or a standards division in which the purchase personnel, and production managers are represented, is constituted on the lines of the budget committee. The cost accountant co-ordinates the functions of the standards committee.

A standard cost system can provide many useful information which cannot be given by an actual or absorbing cost system. Under an actual consisting system, it will be necessary to revise the absorption rates for fixed overheads at regular intervals according to the variations in the volume of output and cost of a particular job may be different in two periods depending upon the volume of the output. A standard cost system eliminates the effect on job costs of fluctuations in volume of output by separating the cost of idle facilities because standard costs have been defined as the normal costs for normal production efficiency at a normal level of output.

Standards should be set for each element of cost separately. These have been briefly described below:

(A) Direct Material

Standard direct material cost for each product should be established. This willinvolve

(a) determination of standard quantity of materials, and

(b) determination of standard price per unit of materials.

In ascertaining standard quantity for material, material specifications, yield factors and normal loss factors should be taken into consideration. Sometimes, test runs may be necessary to determine the standard quantity. The Production Engineer will help the Cost Accountant to determine the standard quantity for each kind of material.

The next step is to fix standard price of materials. This will be done by the Cost Accountant in collaboration with the Purchasing Manager. The rates of materials should be standardised after considering

(a) price of materials in stock;

(b) materials already contracted for;

(c) future trends of prices;

(d) discounts to be received, if any, etc.

(B) Direct Labour Cost

Determination of standard direct labour cost will involve determination of:-

(i) standard time; and
(ii) standard rate

Standard time should be fixed for each grade for labour and for each operation involved. This is generally done in conjunction with the works engineers. Motion study and time study techniques are to be employed in fixing standard performance of labour.

Standard rates of pay for each grade of workers are then to be determined. Any expected increase in the rates should be considered in the assessment, the Personnel Manager will help the accountant in determining standard rates. If overtime work is essential, extra payment for overtime may be included in the wage rates.

(C) Variable Overhead

Variable overhead has been defined as 'a cost which tends to vary directly with volume of output'. Therefore, it is necessary to calculate standard variable overhead per unit or per hour so that per unit cost can be multiplied by budget production during the period. Standard unit cost shall be ascertained after due regard to past records and future trend in prices.

(D) Fixed Overhead

Fixed overhead trends be unaffected by variations in volume of output. It is, therefore, necessary to determine:

(i) total fixed overhead for the period, and
(ii) budgeted production in units of standard hours for the period.

Then it is possible to estimate the standard fixed overhead cost per unit or per hour by dividing total fixed overhead by budgeted total production or standard hours, as the case may be.

Standard Hour

Production is generally expressed in physical units such as tons, pounds, gallons, numbers etc. But when different types of products are manufactured in a factory it is difficult, and sometimes impossible, to express all the products in one common unit. For examples, in a coke oven factory both coke and gas are produced. Coke is generally measured in tons while gas in cu ft. It is difficult to express these two heterogeneous products in one common measure either in tones or in cut. But they can be expressed in standard hours. A standard hour is a hypothetical hour which measures the amount of work that should be performed in one hour.

21.4 Advantages of Standard Costing

The advantages derived from a system of standard costing are tabulated below:

(i) Standard costing system establishes yard-^ticks against which the efficiency (or inefficiency or actual performances) are measured. This facilitates control and cost infuses consciousness among the executives. It also promotes co-operation and co-ordination amongst the various functions and departments of the concern.

(ii) The standard provides incentive and motivation to work with greater effort and vigilance for achieving the standard. This increases efficiency and productivity all around.

(iii) At the very stage of setting the standards, simplification and standardisation of products, methods and operations are effected and waste of time and materials is eliminated. This assists in managerial planning for efficient operation and benefits of all the divisions of the business.

(iv) Costing procedure is simplified. There is a reduction of paper work in accounting and less number of forms and records are required. There is considerable saving in clerical time and expenditure leading to reduction in the cost of the costing system.

(v) Costs are available with promptitude for various purposes like fixation of selling prices, pricing of inter-departmental transfers, ascertaining the value of closing stocks of work-in-progress and finished stock, and determining the capacity. Standard costing provides reliable, accurate, and firm data with simplicity and ease, for the purpose of pricing and filling in tenders and offering quotations. Once prices are fixed, no further adjustments and revisions are necessary as would be required in the case of historical costing.

(vi) Standard costing system facilitates delegation of authority and fixation of responsibility for each department or individual. This also tones up the general organisation of the concern.

(vii) Standard costing is an exercise in planning - it can be very easily lifted into andused for budgetary planning.

(viii) Variance analysis and reporting is based on the principles of management by exception. The top management may not be interested in details of actual performance but only in the variances from the standards, so that corrective measures may be taken in time. This all the more useful in large organisations where attention may be focused on out-of-control or out-of-line variations, about which normally the busy top executives may not otherwise be aware of.

(ix) When constantly reviewed, the standards provide means for achieving cost reduction. Focus on out-of-control situations leads to cost reduction through improved methods, improved quality of products, better materials effective selection and use of capital resources, etc.

(x) Standard costs assist in performance analysis by providing ready means for preparation and interpretation of information.

(xi) Production and pricing policies may be formulated in advance before production starts. This helps in prompt decision making.

(xii) Standard costing facilitates the integration of accounts so that reconciliation between cost accounts and financial accounts may not be necessary.

(xiii) Standard costing optimises the use of plant facilities, current assets, and working capital.

Standard Costs, thus, help, to build budgets, gauge performance obtain product costs, and save book-keeping costs. A set of standards outlines how a task should be accomplished and how much it should cost. As work is done, actual costs incurred are periodically compared with standard costs to reveal variances. The variances are then investigated to identify the underlying causes for the variations so as to detect inefficiencies and to discover better ways of adhering to standards, or altering standards in the light of changed conditions, or of accomplishing objectives more efficiently and effectively.

Self Check Questions

(a) In standard costing, what does the term "standard cost" represent?

(b) What is the primary advantage of using standard costing for performance evaluation?

(c) In standard costing, what does a favorable variance indicate?

21.5 Limitations of Standard Costing

Standard costing has certain limitations. These are :

(i) Establishment of standard costs is difficult in practice. Even if the particular type of standard to be used has been properly defined, there is no guarantee that the standard established will have the same tightness or looseness as envisaged,
throughout the organisation.

(ii) In course of time-sometimes even in a short period, the standards become rigid. It is not always possible to change standards to keep pace with the frequent changes in the manufacturing conditions. Revision of standards is costly and creates problems so that some firms simply ignore such revisions.

(iii) Inaccurate, unreliable, and out of data standards do more harm than benefit.

(iv) Sometimes, standard create adverse psychological effects. If the standard is set at a high level, its non-achievement results in frustration and a build-up of resistance. This acts as a discouragement rather than an incentive for better efficiency.

(v) Due to the play of random factors, variances cannot sometimes be properly explained, and it is difficult to distinguish between controllable and non- controllable variances. For example, the responsibility for an adverse labour time variance may not be fixed on the production department because such a variance may be due to causes beyond their control, such as poor grade of labour (which is the responsibility of personnel department), poor quality of material (purchase department or inspection department) and lack of trained workers of poor working conditions (top management).

(vi) Standard costing may not sometime be suitable for some small concerns. Where production cannot be carefully scheduled, frequent changes in production conditions results in variances, detailed analysis of all of which would be meaningless, superfluous, and costly. A worker in a small business may, for instance, operate several machines under different conditions and at times he may be called upon to set up a machine or to handle raw materials to feed the machines, or sometimes during his temporary absence, his machines may be operated by his supervisor or the charge hand. The variances arising under such circumstances are already known to the management and any elaborate arrangements to analyse them would, therefore, be unnecessary. Thus, in small concerns personal contacts may be more effective than a system of standard costing.

(vii) Standard costing may be found to be unsuitable and costly in the case of industries dealing with non-standardised products and for repair jobs that keep on changing in accordance with customers' specifications. Where products take more than one accounting period for competition, standards may not be very effective.

(viii) Lack of interest in standard costing on the part of the management makes the system practically ineffective. This limitation, of course, applies equally in the case of any other system not accepted wholeheartedly by the management.

21.6 **KEYWORDS**

Standard Costing: A managerial accounting system that sets predetermined costs and compares them with actual costs to evaluate performance.

Standard Cost: The budgeted cost for a unit of product or service, representing an expected level of efficiency.

Direct Labor Rate Standard: The budgeted labor rate for the future, used to evaluate and control labor costs.

Flexible Budget: A budget that adjusts for changes in activity levels, providing a more realistic basis for performance evaluation.

Favorable Variance: Indicates that actual costs are lower than standard costs, reflecting positive performance.

Standard Cost Card: A document detailing the budgeted costs for various elements of production, serving as a reference for performance evaluation.

21.7 **Self Check Exercise**

Short Answer Questions

1. Explain the concept of standard costing and its role in managerial accounting.
2. Describe the process of setting standard costs in a standard costing system, emphasizing the factors considered.
3. Discuss the purpose of a flexible budget in standard costing and how it accommodates changes in activity levels.
4. What is the significance of a direct labor rate standard, and how does it contribute to performance evaluation in standard costing?
5. Explain the role of a standard cost card in a standard costing system, detailing the information it typically contains.

Long Answer Question

1. Evaluate the advantages and disadvantages of implementing a standard costing system in a manufacturing organization, considering both financial and non-financial factors.
2. Discuss the importance of variance analysis in standard costing and how it aids in performance improvement and decision-making.
3. Analyze a real-world case where the implementation of standard costing led to significant improvements in cost control and overall organizational performance.
4. Examine the challenges organizations might face when transitioning to a standard costing system and propose strategies for overcoming these challenges.
5. Explore the relationship between standard costing and other cost management techniques, such as activity-based costing, and how they complement each other.

21.8 ANSWER KEYS (Self Check Exercise)

(a)	The budgeted cost for the future
(b)	Provides a basis for comparison and analysis
(c)	Actual costs are lower than standard costs.

Lesson No. 22 **Author: Manjit Singh**

ANALYSIS OF VARIANCE

22.1. Introduction

In the preceding lesson, we have explained about fixation of standard of different elements of costs & we have also emphasized on the need of comparing actual performance with standard performance. The deviation of actual from standard is known as -variance'. The variance may be adverse or favourable for example, if we are talking about costs variances if actual cost is more than standard cost, it is something adverse. However in case of sales variances, if-actual sales are more than the budgeted sales, the variance sale will be termed as favourable.

(A) Use of Variance Information

In short, Variance analysis provides a means of "Control and Evaluation". Spelled out, the main uses of such variance information are

(a) To Top Management: Variances indicate as to which sections or functions of the organisation requires reprimanding on account of the success or failure of their efforts. They also show the trend in progress of the organisation and allow payment by results according to functional responsibility.

(b) To Functional Management: Variance bring to surface the elements of performance which require attention. Data is provided by the measurement of efficiency of machines, operators and material usage.

(c) To the Cost Accountant: The variances factors can be used for application to standard costs in order to arrive at current actual costs. Since they represent the relative economic gains and sacrifices, future standards can be adjusted accordingly.

Overhead Cost Variance

(B) Requirements of Good Variance Analysis

(1) There must be accurate standards.
(2) It must be possible to control the production analysis.
(3) It must be possible to measure performance accurately.
(4) Responsibility for variances must be pinpointed.
(5) Performance variances should be separated from the forecast variances.

22.2 COST VARIANCES

The cost variances can be put in the form of the following chart:

Standard Price x Std. Quantity for actual output	Actual Actual x Price Quantity

If actual cost is more than the standard cost, it would result in an adverse variance and vice versa.

Material cost variances arise due to variation in the price of the material or in its usage. Thus material cost variance may be analysed under two heads.

Direct Material Cost Variance

Direct Material Price Variance Direct Material Usage Variance

(a) Direct Material Price Variance

This is that portion of direct material cost variance which in due to the difference between the actual and standard price per unit of material applied to the actual quantity. The formula for this completion may be put as follows:

Direct material Price Variance - Actual Quantity (Standard Price - Actual Price)

If the actual price is more than, standard price, the variance would be adverse and in case the standard price is more than actual price it shall result in a favourable variance. Material price variance arises due to following causes

(i) Fluctuations in basic purchase price of material
(ii) Uneconomical size of purchase order.
(iii) Failure to purchase when the price is cheaper.
(iv) Weak purchase organisation.
(v) Emergency purchase - placing such orders of immediate delivery at any price.
(vi) High or low cost of transportation and carriage of goods.
(vii) Use of substitute material having a higher or lower unit price.

Some of the factors may be controlled by the management if care and proper control is exercised some of these are beyond the control of management. If the factors are controllable purchase department is generally held responsible for unfavourable Variances.

(b) Direct Material Usage Variance

It is that portion of material cost variance which is due to the difference between the actual quantity of material used and the quantity which should have been used for the output achieved.

The formula for its computation may be put as follows :

Standard Quantity - Actual
[for-Actual Output Ouantity

The actual quantity, if more than standard quantity would cause an adverse variance and vice-verse. Material usage variance rises due to following causes :

(i) Inefficiency, lack of skill or training and faulty workmanship will result in more consumption of raw materials.
(ii) Change in specification or design of product.

(iii) Defective to machines, equipment and tools, improper maintenance leading to breakdowns and more usage of materials.

(iv) Inefficient and inadequate inspection of raw materials.

(v) Rigid technical specifications and strict inspection leading to more rejections which require more material for rectification.

(vi) Accounting errors may also cause material usage variance because the materials, returned to stock or inter transfer of materials between different jobs may have not been adjusted properly,

(vii) Incorrect setting up of standards would also lead to a variation.

(viii) Change in composition of a mixture of materials for a specified output.

(ix) Yield from materials .in excess of or less than that provided as the standard yield.

A favourable variance may not always be advantageous for the concern. For example a saving in materials usage may perhaps be reflected by reduction in wastage by slowing down the work but what if resulting increase in the labour and overhead costs may far exceed the favourable material usage variance. *

Direct Material Usage Variance may further be classified as (i) Material Mix variance and (ii) Material Yield variance. This has been shown in the following:

Direct Material Usage Variance

Direct Material Mix Variance Direct Material Yield variance

Direct Material Mix Variance : Material mix variance arises when different raw materials are actually mixed in order to obtain a product, Such situation arises mainly in chemical, rubber, textiles and some other similar industries. According to ICMA London, it is “that portion of direct material usage variance which is due to the difference between the standard and actual composition of mixture," It may be a result to temporary shortages or rising costs, etc. of a particular type of material.

Then formula for calculating material mix variance can be put as under:

Revised Standard - Actual 1
Quantity I
Quantity
]

f Total Weight of Actual Mix] [Standard]
Revised Standard Quality - [TotaJ weight of Standard MixJ * [Quanlty J

When the actual quantity is less than revised one, there is a favourable variance vise versa.

Direct Material Yield Variance: It is that position of material usage variance which is due to the standard yield specified and actual yield obtained. This is particularly applicable in case of process industries whtfrd a certain specified yield in expected from a given input of materials but actual yield is different. This variance may occur due to some abnormal contingencies like spoilage, mechanic reactions etc. The term standard yield here means the production which shall result in by

Standard Output - Actual for Actual Mix Output.

If actual output is more than standard output, the variance would be favourable and vice versa. Example From the following date, calculate.

(a) Material Price Variance
(b) Material Mixture Variance
(c) Material Yield Variance
(d) Material Usage Variance

Material	Standard Price Per lb (Rs.)	Standard Weight per unit of Output lb	Actual Usage or output of 36 Units lb	Actual Price per lb (Rs.)
A	10	2	72	12
B	1	4	108	1
C	5	3	126	4
		9	306	

Solution :

(a) Direct Material Price Variance - Actual Quantity (Standard - Actual Price)

For A = 72(10 - 12) Pric
B * 108 (1 - 1)
C - 126 (5 4) Total Material Price Variance = Rs. 126 Favourable = 18 Adverse

(b) Direct Material Mix Variance = Standard Price x [Revised Standard - Actual Quantity Quantity

Revised Standard Quantity = Total Wt. of Actual Mix / Total Wt. of Standard Mix x Quantity

Standard Quantity for 36 Units:
For A * 2 x 36 "72 Units
B' * 4 x 36 - 144 Units
C - 3 x 36 - 108 Units
Total Weight for Standard Mix:

For A 306/324 x 72 - 681b
B 306/324 x 144 - 1361b
x108 - 1021b

Material Mix Variance :
For A - 10 (68 - 72) = Rs. 40 Adverse -
B - 1 (136 - 108) Rs. 28 Favourable »
C - 5 (102 - 126) Rs. 120 Adverse

Total Material Variance Rs. 132 Adverse

(c) [Standard Cost] fStandard Output - Actual 1 Direct Material Price Varianc - [^ Unlt J * |_for ^tual Mix Output J

Actual Mix
Standard Output - standard Weight per Unit

3061b / 9 lb = 34 units

Standard Cost per Unit » 1 0 * 2 + 1 " * 4 + 5 * 3
- 2 0 + 4 + 1 5 - Rs. 39

Direct Material Yield Variance ■ Rs. 39 (36-34) 3 Rs. 78 Favourable

(d) Direct Material Usage Variance — Standard! [Standard Quantity - Actual 1 Price J [for Actual Output QuantityJ

For A - Rs. 10 (72 - 72)	Nil
B « Rs. 1 (144 - 108)	Rs. 36 Favourable
C - Rs. 5 (108 - 126)	Rs. 90 Adverse
Total Material Variance	Rs. 54 Adverse

(e) Direct Material Cost Variance - [Standard Cost for Actual Output — 1 ["Actual

Material	Standard Price (Rs.)	Standard Quantity	Standard Cost (Rs.)	Actual Price (Rs.)	Actual Quantity	Actual Cost
A	10	72	720	12	72	864
B	1	144	144	1	108	108
C	5	108	540	4	126	504
		1404			1476	

Material Cost Variance = Rs. 1404 * Rs. 1476 = Rs. 72 Adverse

Direct Labour Variances : The deviations in cost of direct labour may occur because of two main factors (i) difference in actual rates and standard rates of labour and (ii) the variation in actual time taken by workers and standard time allotted to them for performing a job or an operation.

The various direct labour variances may be put as follows:

Direct Labour Cost Variances : It is the difference between actual direct wages incurred and standard direct wages specified for the activity achieved.

The formula for labour cost variance is :

Direct Labour'j IVstandard'j /^Standard Time for/'Actual'! /'Actual
Cost Variance J Rate J \ Actual Output J { Rate J * (Time

The direct labour cost variance may arise on account of difference in either rates of wages or time. Thus it may be further analysed as (i) Rate variance and

(ii) Time or Efficiency Variance :

Direct Labour Cost Variance (DLCV)

Direct Labour Rate Variance (DLRV) | Direct Labour Efficiency Variance (DLEV)

Direct labour Rate Variances : This is that portion of direct labour variance which is due to the difference between the actual and standard wage rate per hour applied to total hours worked. The formula is:

(Direct Labour'j _ Actual! [Vstandard^ (Actual \ l^Rate Variance ⌡ | Time ⌡
Rate) \ Rate ⌡

If the standard rate is higher that the actual rate., it shall result in a favourable variance and vice-versa.

Direct labour rate variance occurs due to the following :

(i) Change in the basic wage structure or in piece work rate not yet reflected in the standard wage rate.

(ii) Employment of workers of grade and rates of pay different from those specified due to shortage of labour of proper category.

(iii) To meet the demand of urgent orders, workers may have been asked to work overtime. The overtime rates are certainly higher than standard wage rate, causing a variance.

. . .

(iv) Availability of labour in abundance and a competition among them for employment would lead to less incurrence of expenditure on wages.

(v) The composition of a gang regards the skill and rates of wages being different from that laid down in the standard.

(vi) Due to seasonal or emergency, remove operations, higher rates might have been paid.

(vii) General rise due to agreement with labour union or otherwise.

(viii) The system of wage payment might have changed from time wages to piece wages or vice versa or some incentive or bonus scheme might have been introduced or withdrawn.

Labour rates are usually determined by factors beyond the control of personnel department, such as conditions in labour market, wage awards by wage tribunals etc. Labour rate variances are therefore mostly uncontrollable except for the portion which arise due to wrong grade of labour, use of different mode of payment, overtime work, etc. are the controllable factors for which departmental executive may be held responsible.

Direct Labour Efficiency Variance* : This is that portion of direct labour (wages) variance which is due to the difference between the standard labour hours specified for the activity achieved and actual labour hours expended.

The formula for calculating direct labour efficiency is:

(Labour Efficiency Standardl | Y standard Time for'j (Actual^
⌡Variance ⌡Rate ⌡Actual Output

(i) Lack of proper supervision or stricter supervision than specified.
(ii) Poor working conditions.
(iii) Defective and bad quality materials.
(iv) Break down of plant and machinery.
(v) Method of production might have altered.
(vi) Delay due to waiting of materials, tools, instructions, etc. If not treated as idle time.
(vii) Basic inefficiency of workers due to low morale, insufficient training faculty instructions, etc.
(viii) Increase in labour turnover.

Idle Time Variances : Due to abnormal wastage of time on account of strikes, lockouts, power failure, etc. The actual hours worked maybe much less than standard hours fixed. The variance on account of abnormal circumstances is segregated from time to time from efficiency variance.

The formula for its calculation is as under :

Idle time variance - Standard rate per hour * Idle hours

The labour efficiency variance can be further segregated into (i) Direct labour mix or Gang composition variance, and (ii) Yield variance.

Direct Labour Efficiency Variance
(DLEV)

Direct Labour Mix Variance (DLMV) | Direct Labour Yield Variance (DLYV)

Direct Labour Mix Variances : Sometimes a change in the grade of labour employed on an operation has to be made from the standard labour mix due to shortage cf one grade of labour during a certain period. The variances which isolate the impact of such a change in gang composition (labour mix) on the labour cost variance is designed as labour mix variance. The formula for its computation may be put as follows :

f Direct Labour^ [Standard 1 17 Revised Standard'] /"Actual')
[MIX Variance ⎛ Rate ⎞x Time ⎛

Time

where

Total Standard Time
Revised Standard Time - Total standard Time * SUmdard Time

Labour Yield Variances : Labour yield variance is similar to material yield variance. It is the variation in labour cost on account of increase or decrease in yield output as compared to the relative standard. The formula for its computation is as follows:

(Direct Labour 'j _ Standard Cost
(Yield Variance j [per Unit (Standard Output'] *f* Actual
^ \ for Actual ⎛ ^Output ⎛

If the actual productions is more than standard production, it would result in favourable variance and vice versa.

22.3 OVERHEAD VARIANCES

At the outset, it may be noted that unlike direct materials and labour the factory overheads are not entirely vary with the level of output. Therefore, standard costs for factory overheads are based upon budgets and not on standards. That's why, the analysis concerning overheads variances is materially different from variances relating to materials and labour. However, like materials and labour variances, overheads variance is the difference between actual overhead cost incurred and standard overhead cost charged to production. For the purpose of determining the latter amount, the distinction between variable and fixed overhead cost is very significant.

Thus, overhead cost variance can be defined as the difference between standard cost of overhead allowed for the actual output achieved and actual overhead cost incurred.

The formula, for its calculation is:

Overhead Cost Variance-Actual Output x Standard Overhead rate per unit.

Actual overhead cost.

Overhead cost variance can be classified as :

(i) Variable Overhead Variance

(ii) Fixed Overhead Variance

Variance Overhead Variance : It is the difference between standard variable overhead cost allowed for a actual output achieved and actual variable overhead cost. The formula for its computation is as follows :

'Variable Overhead Variance	=	Actual Output	x	indard Variable^ Overhead Rate per Unit - Actual Variable^ Overhead Rate per Unit

Some accountants are of the view that we can calculate the variable overhead efficiency variance just like labour efficiency variance. Variable overhead efficiency variance can only be calculated if information regarding time taken and time allowed is given. In such a case, variable overhead efficiency variance can be divided into two parts:

(a) Variable Overhead Expenditure Variance

Actual Worked Hours		Standard Variable^ Overhead Rate per Hour		Actual Variable^ Overhead Rate

(b)

Standard Time • for Actual Production	X	Standard Variable^ Overhead Rate per Hour	-	Actual Hours Worked	X	^Standard Variable^ Overhead Rate per Hour

Fixed Overhead Variances : The treatment of fixed overhead variances is significantly different from variable overhead variances. The reason is that fixed factory overheads do not vary with production volume. The fixed overheads are charged to production as a predetermined standard fixed overhead rate.

Fixed overhead variance is that portion of total overhead cost variance which is due to the difference between standard cost of fixed overhead allowed for actual output achieved and

actual fixed overhead cost incurred. The formula for its calculation can be put as follows:

Fixed overhead variance

-Actual output x St. fixed overhead rate per unit - Actual fixed overheads.

This variance can be broken up into different subvariances and analysed as under:

1. Expenditure Variance : This is that portion of fixed overhead variance which arises due to the difference between the budgeted fixed overheads and actual fixed overheads incurred during a particular period. Symbolically.

Expenditure Variance - Budgeted fixed overheads - Actual fixed overheads.

2. Volume Variance : This is that portion of fixed overhead variance which arises due to difference between standard cost of fixed overhead allowed for actual output and the budgeted fixed overheads for the period during which actual output has been received. This variance reveals over or under absorption of fixed overheads during a particular period. If actual output is more than standard output, then there is over-recovery of fixed overheads and volume variance is favourable and .vice verse, if actual output is less than standard output. This is due to the fact that fixed overheads are not expected to change with change in output.

The formula for computation of this variance is :

Volume variance

- Actual output x Standard fixed overhead rate - Budgeted fixed overheads.

The volume variance can be divided into three sub-variances. These are :

(1) Capacity Variance : This variance is related with the under or over utilisation of plant capacity and arises due to idle time, lockouts, strikes, etc. Simply, we can say that it is that portion of volume variance which is due to working at higher or lower capacity than standard capacity. This variance can be expressed as :

Capacity Variance - [Standard Fixed] [(Revised Budget^ f Budge tsYl

TStandard Fixed 1 [YRevised Budget^ (Budgets \\

[Overhead RateJ \/ Hours ∫\ Hours JJ

(ii) Calendar Variance : This is that portion of fixed overhead volume which arises due to the difference between the number of working days in the budgeted period iand number of actual working days in the budgeted period. If the actual working days are less than standard working days, the variance will be adverse and vice versa. If actual number of working days are more than standard days.

Calendar Variance - Increase or Decrease in Production Due to Change in Working × Standard Fixed Overhead Rate per Unit

(iii) Efficiency Variance: This is that portion of volume variance which arises due to the difference between budgeted efficiency of production and actual efficiency achieved. It can be expressed as follows:

Efficiency Variance - Standard Fixed Overhead Rate per × (Actual Output'j (Bugeted Output

Here standard output means budgeted output adjusted to increase or decrease in output due to a capacity or calendar variances.

Que. 1: A concern ham estimated its overheads for a month at Rs. 8400. It operates for • 25 days in a month and for 8 hours in a day. The budgeted production for the month is 2,100 units. During the month of January 1999, it produced 2,200 units of output and the actual overheads incurred Stood at Rs.9000. Calculate.

(a) Overhead Cost Variance
(b) Overhead Expenditure Variance
(c) Overhead Volume Variance

Sol.:

Standard Rate (per Unit of Output) » 8400 „ / 2T00=

(a) Fixed Overhead Cost Variance:

Standard Fixed Overhead - Actual Fixed Overhead (4 x 2200) - 9000

- 200

(b) Overhead Expenditure Variance :

Budgeted Fixed Overhead - Actual Fixed Overhead

- 8400 - 9000

- 600

(c) Overhead Volume Variance :

Standard Rate (Actual Production - Budgeted Production)

4 (2200 - 2100)

400

Verification:

Fixed Overhead Variance - Fixed Expenditure Variance + Fixed Overhead Cost Variance

- 600 + 400

* - 200 Ans.

Que. 2: From the cost records of a concern, it is observed that one unit of product X requires variable overheads. For 2 hours at the standard rate of Rs. 10 per hours. During January 1998, 1000 units were produced consuming 2200 hours with actual variable overheads of Rs. 8 per hour. Calculate variable overhead variance.

Sol.

Actual hours worked	= 2000 hours
Actual variable overhead rate	= Rs. 8 per hours
Actual output	- 1000 units
Standard variable overhead rate	- Rs. 10 per hour
Standard hours for actual production	- 1000 * 2 • 2000 hours.

Standard variable overhead rate per unit - 2 hours * 10 per hours

=20 Rs. per unit.

Calculation of actual variable overhead rate per unit:-

----Actual---- = 2200 _ 22 Hour&

Actual Output 1000 per Unit - 22 Hours * 8 Rs. per Hours - Rs. 71.6 per Unit

(a) . Variable overhead variance

Actual output (standard variable - actual variable)

. (Overhead per unit - overhead per unit)

1000 (20 - 17.6)

1000 (2.4)

2400

(b) Variable overhead expenditure variance

Actual worked standard variable Actual variable overhead

Overhead rate per hour rate per hour '

2200(10 - 8)

2200 (2)

4400

(c) Variable overhead efficiency variance

standard time for * standard variable overhead

actual production rate per hour - (actual hour worked * standard variable overhead rate per hour)

2000 x io - 2000 x io 2000 - 2000 0 Ans.

standard costing. What are the remedial measures.

1. The standard cost of a chemical mixture is :

40% material A at Rs. 40 per ton

60% material B at Rs. 30 per ton

A standard loss of 10% is expected In production actual cost of materials used is :

90 tons material A at a cost of Rs. 42 per ton 160 tons material B at a cost of Rs. 28 per ton actual output is 230 tonnes. Calculate the matrical variance.

2. Calculate :

(i) P/V ratio

(ii) the amount of the fixed expenses

(iii) the member of units to break even

(iv) the member of units to earn a profit of Rs. 40, 000.

The selling price per unit can be assumed at Rs. 100.

The company sold in two successive periods 7000 units and 9,000 units and has incurred a loss of Rs. 10,000 and earned Rs. 10,000 as profit respectively.

3. Short notes :

(i) Marginal cost

(ii) Break Even Point

(iii) P/V ratio

(iv) Differencebetween absorption costing and marginal costing

(v) Standard costing

(i) limitations of standard costing
(ii) Material Variances
(iii) Types of Budgets
(iv) Budgetary Control
(v) Master Budget
(vi) Labour Mix Variance.
(vii) material usage.

Self Check Questions (True/False)

(a) A favorable variance in Variance Analysis always indicates superior performance.

(b) Unfavorable variances in Variance Analysis suggest that actual performance exceeds budgeted expectations.

(c) Sales volume variance in Variance Analysis assesses the impact of changes in sales volume on revenue.

(d) Direct labor rate variance is calculated by multiplying actual hours worked by the standard rate.

(e) The materials price variance in Variance Analysis focuses on changes in the efficiency of material usage.

22.4 KEYWORDS

1. **Variance Analysis**: A managerial accounting tool that compares actual performance to budgeted expectations to identify deviations.
2. **Favourable Variance**: Indicates that actual performance exceeds budgeted expectations, resulting in positive outcomes.
3. **Unfavourable Variance**: Represents a negative deviation from budgeted expectations, signalling areas for improvement.
4. **Sales Volume Variance**: Measures the impact of changes in sales volume on revenue in Variance Analysis.
5. **Direct Labour Rate Variance:** Calculated by multiplying the difference between actual and standard labour rates by the actual hours worked.
6. **Materials Price Variance**: Assesses the impact of changes in material prices on costs by comparing actual and standard prices.

22.5 Self Check Exercise

Short Answer Questions

1. Define marginal costing and give its different applications.
2. Define ‘marginal cost' and marginal costing’. How are variable costs and fixed costs treated in marginal costing?
3. Discuss the importance of break-even point, margin of safety, contribution and project volume ration in relation to marginal costing.
4. Explain the concept of Variance Analysis and its role in managerial decision-making.
5. Describe the difference between a favorable variance and an unfavorable variance in Variance Analysis.
6. Discuss the factors that may contribute to an unfavorable efficiency variance in labor costs.

Long Answer Questions

1. What do you understand by the term *break-even point’. Why should it be calculated.
2. Define budgeting and explain different types of budgets.
3. Explain the relationship between budget, budgeting and budgetary control.
4. What are the main steps in budgetary control? State the main objectives of budgetary control.
5. Define standard costing and give its importance.
6. What do you mean by standard cost. What level should be standards to be set. Do standard costs represent a separate type of cost system?
7. What is the significance of the term Variance' in standard costing. Define and explain different variances.

22.6 ANSWER KEYS Self Check Exercise)

(a) False
(b) False
(c) True
(d) True
(e) False

MBA-CC (First Year)
Semester-I

Lesson No. 23

AFM 105
ACCOUNTING FOR MANAGEMENT

AUTHOR : SHALU JAIN

ACTIVITY BASED COSTING

STRUCTURE

23.1 INTRODUCTION

Cost Accounting is used to collect, classify, process, analysis and reporting the information to the managerial units of the organisation and to help the management in decision making in respect of cost of the production. Traditional Accounting has been focused on product costing by tracing direct cost but it do not take into consideration the other factors which may increase the cost of production. To overcome and to improve these inadequacies traditional methods has been left out and replaced with the modern method. Activity Based Costing is one of them which is discussed in this lesson.

23.2 ACTIVITY BASED COSTING

23.2.1. Concept of ABC

The cost accounting includes connecting, classifying, processing analysis and reporting of information to managers in their planning and control activities and information system to be developed to help decision making within the firm. Traditional cost system such as job-order costing or process costing or some hybrid of the two has been used by most of the companies. Using the traditional methods of assigning overhead costs to products using a single predetermined overhead rate based on any single activity measure can produce distorted products costs. The growth in the automation of manufacturing (such as increased use robotics, high tech machinery and other computer-driven process) has changed the nature of manufacturing and the composition of total product cost. The significance of direct labour cost has diminished and that of overhead costs has increased. In this environment, overhead absorption rates based on direct labour or any other 'volume-based cost driver* may not provide accurate overhead charges, since they no longer represent cause and effect relationships between output and overhead costs.

Activity based costing usually increased costing accuracy because it focuses on the cause-and-eflect relationship between work performed (activities) and the consumption of resources (costs). ABC system assign costs to products based on the products use of activities,

not product volume. An activity based cost system is one which first traces costs to activities and then to products.

ABC has been defined by CAM-1 organization of Arlinton Texas as "The collection of financial and operation performance information tracing the significant activities of the firm to product costs."

ABC is a recent assessment in cost accounting which attempts to absorb overhead into product costs on a more realistic basis. The principal difference between the two methods is the number of cost drivers used. The basic idea of ABC is that costs are grouped according to what drivers them or causes them to be incurred. It uses a much larger number of cost drivers than the one or two volume-based cost drivers typical in a conventional system. In fact, the approach separates overhead costs into overhead pools where each pool is associated with a different cost driver. Then a predetermined overhead rate is computed for each cast pool and each cost driver. In consequence, this method has enhanced accuracy.

23.2.2 How to successfully implement ABC System

To implement ABC system, successfully, undermentioned areas are required to focus.

1; Objectives should clear and tangible
2. Top management should support ABC system.
3. Cross-functional team members should have strong project management skills.
4. The team should learn from other companies' experience.
5. Communication should regular and honest.
6. Sufficient time must be allowed to gather and analyse data.

23.2.3 Steps in ABC

Four steps are used to determine the cost of goods and services using ABC.

Step 1 : Identity and classify the activities related to company's products

Activities in all areas of the value chain (product design, production marketing, distribution etc.) must be included, people identify the activities that a company performs to produce a product and prepare a list, called on activity dictionary of these activities. As activities are identified, they are classified unit level, batch level, product level, customer level or facility level.

Step 2 : Estimate the cost of activities Identified in Step 1

Estimate the costs of specific activities that cause costs. These costs are for both human resources such as employee labour for production and machine maintenance and physical resources such as cost of machinery and building occupancy. Information must include employee data from personnel interviews and financial data from accounting department. Step 3 : Calculate a cost-driver rate for each activity

The activity cost data from step 2 is used to calculate a cost driver rate that the company can use for assigning activity costs to goods and services. This rate should use a base that has some casual links to the cost, eg. cost of running a production machine are likely caused by the number of hours it is run.

Step 4 : Assign activity costs to products

The driver rates prepared in step 3 are used to assign activity costs to goods and services, eg. A particular product uses 1.5 machine hours in production and rate from step 3 in Rs. 50 per hour, the product is assigned Rs. 75 based on its machine usage.

Upon completing these 4 steps, a company can calculate the costs to provide existing goods and services, which can be used to better understand the profitability of each product or service. The activity based costing rate also could be used to estimate in cost of future products.

Note :

1. Unit-level resources and activities are acquired and performed specifically for individual units of product or service.
2. Batch-level resources and activities are acquired and performed to make a unit or batch of similar products.
3. To produce and sell a specific good or service.
4. To serve specific customers.
5. To provide the general capacity to produce goods and services.

23.2.4 Features of ABC

The important features of ABC are noted below :

- Simple traditional distinction trade between fixed and variable costs not enough guide to provide quality of information to design a cost system.
- The more appropriate distinction between cost behaviour patterns are volume (scale) related, diversity (scope) related, events (decisions) related and time related.
- Cost drivers need to be identified. A cost driver is a structual determinant, of cost related activity. The logic behind is that the cost behaviour pattern must be understood so that behaviour pattern is dictated by cost drivers. In tracing overhead cost to product, a cost behaviour pattern must be understood so that appropriate cost driver could be identified.

Self Check Questions

(a) In ABC, what is an "activity cost pool"?

(b) How does ABC differ from traditional costing methods in terms of allocating overhead costs?

(c) What is a cost driver in the context of Activity-Based Costing?

(d) In ABC, how are indirect costs allocated to products?

23.2.5 Why Companies use ABC

1. Cost reduction : Management can use this information to identify activities that are costly and then take steps to reduce their costs by changing the production processes or outsourcing these activities.

2. Decision Making : Product pricing and decisions of whether to continue producing a product or keeping a particular customer, ABC provides more accurate cost information which can be used by management to negotiate, price increases with customers or to drop unprofitable products.

3. Budgeting and performance measurement : Management can use this information to improve budgets and measure of department and division performance.

23.2.6 HOW TO IMPLEMENT ABC SYSTEM?

In ABC the hidden weaknesses and high cost segments are identified for maximum effectiveness of cost accounting system. The process of designing and implementing an ABC system for support department usually by way of interviewing the concerned departmental heads to have an insight into the departmental operations and into the factors that trigger departmental activities. Subsequent analysis traces these activities to specific products. Suppose the inventory control department is responsible for raw materials and purchased components. The relevant questions that could be asked are :

- How many people work in the department ?
- What do they do?
- What determines the time required to process and incoming shipment ? Does it

matter if the shipment is large or small ?

- Do you usually disburse the total amount of material required for a production run all at once or does it go out in smaller quantities ?

After the interview the system designer can use the number of people involved in each activity to allocate the departments costs. ABC calls for high level costing policy, cost technology and modules for activities effectiveness in a competitive economy for survival and prosperity.

23.2.7 Illustrations

Illustration-I

Patiala Mechanicals has for categories of overhead. The four categories and expected overhead costs for each category for next year are listed below.

Maintenance	Rs.2,00,000
Material handling	32,000
Set-ups	1,00,000
Inspection	1,20,000

Currently, overhead is applied using a predetermined overhead rate, based on budgeted direct labour hours. 50,000 direct labour hours are budgeted for next year.

The company has been asked to submit a bid for a proposed job. The plant manager feels that getting this job would result in new business in future years. Bids are based on full manufacturing cost plus 20 percent.

Estimates for the proposed job are as follows :

Direct materials	Rs. 6,000
Direct labour	Rs. 10,000
Number of materials moves	12
Number of inspections	10
Number of set-ups	2
Number of machine hours	500

In the past, full manufacturing cost has been calculated by allocating overhead using a volume-based cost driver, direct labour hours. The plant manager has heard of a new way of applying overhead that uses cost pools and cost drivers.

Expected activity for the four activity-based cost drivers that would be used are :

Machine hours	20,000
Material moves	1,600
Setups	2,500
Quality inspections	4,000

1. (a) Determine the amount of overhead that would be allocated to the proposed job if direct labour hours is used as the volume-based cost driver.
   (b) Determine the total cost of the proposed job.
   (c) Determine the company's bid if the bid is based on full manufacturing cost plus 20 percent.
2. (a) Determine the amount of overhead that would be applied to the proposed project if activity-based cost drivers are used.

(b) Determine the total cost of the proposed job if activity-based costing is used.

(c) Determine the company's bid if activity-based costing is used and the bid is based on full manufacturing cost plus 20 percent.

Solution

A. (i) Total Overhead - Rs.2,00,000+ Rs.32,000-Rs. 1,00,000+Rs. 1,20,000-4,52,000 Overhead rate * Rs. 4,52,000/50,000 DLH* ■ Rs.9.04 per DLH Overhead assigned to proposed job = Rs. 9.04 x 1,000 DLH = Rs.9,04D Total Cost of Proposed Job :

(ii)

	Rs.
Direct Labour	10,000
Direct Materials	Rs. 6,000
Overhead Applied	Rs. 9,040
Total Cost	R». 25,040

(iii) Company's bid Full manufacturing cost x 120%*Rs.25,040%xl20%-Rs.30,048

B

(i)

Setups	Rs. 100,000/2,500 * Rs.40 per setup
Materials handling	Rs. 32,000/1,600 - Rs. 20 per move
Inspections	Rs. 1,20,000/4,000 - Rs. 30 per inspection
Maintenance	Rs. 200,000/20,000 - Rs. 10 per machine hour
Overhead assigned to proposed job	
Setups	Rs. 4 0 x 2 = Rs. 80
Materials handling	Rs. 20 x 12 - Rs. 240
Inspections	Rs. 30 x 10 - Rs. 300
Maintenance	Rs. 10 x 500 - Rs. 5,000
Total	5,620

(ii) Total Cost of proposed project

Direct Labour	Rs. 10,000
Direct Materials	Rs. 6,000
Overhead Applied	Rs. 5,620
Total Cost	Rs. 21,620~

(iii) Company's bid - Full manufacturing cost x 120% Rs.21,620x120% = Rs.25,944

Direct Labour		Rs. 10,000
Driect Materials		Rs. 6,000
Overhead Applied :		
Setups	Rs. 80	
Materials handling	240	
Inspections	300	
Maintenance	5.000	5.620
	Total =	Rs.21,620
	Markup®	120%
	Bid Price	Rs. 25,944

Illustration-U : A company manufactures two products S and T using the same equipment and similar processes. An extract of the production data for these products in one period is shown below :

Particulars	S	T
Quanty Produced in units	5,000	7,000
Direct labour hours per unit	1	2
Machine hours per unit	3	1
Orders handled in the period	15	60
No. of Set-ups	10	40
Overhead costs		Rs.
Relating to machine activity		2,20,000
Relating to production run set-ups		20,000
Relating to handling or orders		45,000
		2,85,000

Calculate the production overhead to be absorbed by one unit of each of the products using the following costing methods-

a. A traditional costing approach using a direct labour hour rate to absorb overheads.

b. An activity based costing approach using suitable cost drivers to trace overheads to products.

1. Direct Labour Hours

Product S • 5,000 units * lhour		5,000
Product T	7,000 units X 2hours	14,000
DLHs.		19,000
Overhead absorption rate	Rs. 2,85,000	15 per hour
	19,0	(DLH)

Overhead absorb would be as follows :

Product S (1 hour x 15Rs.)

Product T (2 hour x 15Rs.)

2. Machine hours

Product S	5,000 units x 3 hours	15,000
Product T	7,000 units x 1 hour	7,000
MHs		22,000

Using ABC the overhead costs are absorbed to the cost drivers.

Machine-hour driven costs 2,20,000/22,OOO(MH) - Rs. 10 PMH Setup driven costs

	20,000/50 (Setups)	« Rs. 400 per setup
Order driven costs	45,000/75 (Orders)	“ Rs. 600 per order

Particulars	Product S	Rs.	Product T	Rs.
Machine Driven Costs	(15,000hrs x Rs. 10)	1,50,000	(7,000 hrs x Rs. 10)	70.000
Setup Costs	(10 x Rs.400)	4.000	(40 x Rs.400)	16.0
Order handling Costs	(15	9.00	(60 x Rs.600)	36,000
		1,63,000		

	Product S	Product T
Units produced :	5,000	7,000
Overhead cost per unit	1,63,0 - Rs. 32.60	1,22,0 = Rs. 17.43
	5,000	7,000

These figures recommend that product T, absorbs an unrealistic amount of overhead using a direct labour hour basis.

23.2.8 Advantages of ABC

1. Help in cost reduction by a ding value adding services.
2. Determination of non-manufacturing cost, which helps in price determination.
3. Helps in price fixation after providing information regarding costs.
4. ABC deterring products/activity wise cost which enable to prepare settlement of improvements.

ABC has been defined by CAM-1 organisation of Arlinton Texas as "the collection of financial and operation performance information tracing the significant activities of the firm to product costs."

23.3 KEYWORDS

1. **Activity-Based Costing (ABC):** A cost allocation method that assigns costs to products based on the activities involved in their production.
2. **Cost Driver:** A factor that causes costs to be incurred in an activity, used for allocating indirect costs in ABC.
3. **Cost Hierarchy:** The classification of costs based on their nature, helping categorize costs at different levels of detail in ABC.
4. **Cross-Subsidization:** The redistribution of costs across products or services, addressed by ABC to prevent distorted cost allocations.
5. **Activity-Based Budgeting:** Incorporating cost drivers and activities into the budgeting process for more accurate financial planning.
6. **Cost Allocation:** Assigning costs to specific activities or products based on the factors driving those costs, a key principle of ABC.

23.3 Self Check Exercise

Short Answer Questions

1. Explain the key principles of Activity-Based Costing and how it differs from traditional costing methods.
2. Discuss the significance of cost drivers in the context of Activity-Based Costing and provide examples.
3. How does ABC address the issue of cross-subsidization in cost allocation?
4. Explain the concept of cost hierarchies in Activity-Based Costing and their role in cost classification.

Long Answer Questions

Q.I. What do you mean by ABC system? What are its basic features ?

Q.2. What are the steps in implementation of ABC system? How it can be useful for business units?

Q.3. Singla Engineering Inc., previously used a cost system that allocated all factory overhead costs to products based on 350 percent of direct labour cost. The company has just implemented an ABC system that traces indirect costs to products based on consumption of major activities as indicated below. Compare the total annual costs of Product C using both the traditional value based and the new ABC systems.

Activity	Annual Cost Driver Quantity	Cost	Product C Cost Driver Consumption
Labour	Rs.3,00,000	Rs.30,000	Rs. 10,000
Machining	20,000 hours	Rs.5,00,000	800 hours
Setup	10,000 hours	Rs. 1,00,000	100 hours
Production Order	2,00 orders	Rs.2,00,000	12 orders
Material handling	1,000 requisitions	Rs.20,000	5 requisitions
Parts Administration	12,000 parts	Rs.4,80,000	18 parts

23.4 SUGGESTED READINGS

1. Cost Accounting (Principles and Practice)
   By : SP Jain and KL Narang Kalyani Publishers.
2. Cost Accounting
   By : Jawahar Lai, Tata McGraw Hill Publication.
3. Cost Accounting
   By : SP Iyenger, Sultan Chand and Sons Publishers.

23. 5 ANSWER KEYS (Self Check Exercise)

(a) A group of similar activities that incur overhead costs
(b) ABC allocates overhead based on multiple cost drivers related to activities
(c) A factor that causes costs to be incurred in an activity
(d) Based on the specific activities that drive costs

Lesson No. 24 AUTHOR : RAVI SINGLA

MANAGEMENT CONTROL IN DECENTRALISED ORGANISATIONS

STRUCTURE

24.1 MEANING OF DECENTRALISED ORGANISATIONS

A decentralised organisation refers to that organisation which is broken into various divisions in accordance with the products or services it offers. Here the head of each division is responsible for managing the affairs of his/her respective division. The autonomy enjoyed at the level of divisional head in a decentralised organisation structure is the same as experienced by the CEO in a functional organization structure. One of the best examples of decentralised organization structures would be the highly diversified companies like ITC Limited, which has divided its different businesses into divisions like, FMCG Division, hotels division, Paperboards and Packaging division and Agri-Businesses division. An another example is of Reliance Industries Limited which has divided its different businesses into Exploration and Production Division, Petroleum Refining and Marketing Division, Petrochemicals Division, Textiles Division and Retail Division. In a dccentralised organization structure the divisional head has all the decision making responsibility over costs, revenues and investments of division.

The term decentralisation means the process of delegating decision making authority down the organization hierarchy. It is the division of a group of functions and activities into relatively autonomous units with the overall authority and responsibility to the head of each unit in concern with the delegated operations. In simple words it refers to the delegation of

freedom to make decisions. The term decentralization should not be confused with delegation of authority. In delegation of authority the power to control the delegated tasks vests with the person delegating the authority whereas, in decentralization the power to control is also delegated to the lower level managers.

The term centralization refers to the conditions where much of the decision making authority is retained at the top of managerial hierarchy. It is obvious that no organization can have either complete centralization or complete decentralization. Complete centralization means the managers retaining complete authority to take decisions, thus implying no subordinate managers to take decisions and hence the formal organization structure with the well defined authority responsibility relationships would cease to exist. Complete decentralization means managers delegating all their authority to the lower level managers, thus implying that managers would cease their status of manager and such an organization structure also cannot exist. Complete centralization or decentralization thus never exists. Always the top level management retains some authority to take strategic decisions and decentralize the rest of authority to operating units to help them carry out the work of their respective divisions.

Decentralisation is a matter of degree along a continuum. The extent of degree of decentralization is determined by the nature of authority delegated, how far down in the organization hierarchy it is delegated and how consistently it is delegated. The degree of decentralization would be greater, if:

(a) Large numbers of decisions are made by the lower levels of management in the organization.
(b) More important decisions, like capital expenditure decision, are taken at the lower levels of management.
(c) More functions are performed at the lower levels e.g. Finance and Personnel functions being performed at the branch level.
(d) No check or control is exercised on decisions made by the lower levels of management.

24.2 REASONS (BENEFITS) OF DECENTRALISATION

The decentralised organizations enjoy mammoth benefits which has motivated a large number of companies to adopt the decentralised organization structure. These benefits are listed below :

1. The lower level managers have a greater understanding of the environment they work in and the people that they interact with. This knowledge, skills and experience may enable them to make more informed judgements than central management who is just acquainted with all the activities of the various segments of the business.
2. The empowerment of lower level managers enables them to respond faster to the changes in environment. Whereas the senior managers may take much longer time to appreciate the fact that business needs have changed.
3. Decentralised organisations provide greater freedom to managers to take independent decisions thus make their jobs more challenging. It provides them an opportunity to achieve self-fulfilment. Moreover, decision making itself is a form of empowerment. All this can increase employee motivation and consequentially the output of the organisation may also increase.
4. As in the decentralised organisations majority of the decisions are undertaken by the lower level managers, it enables senior managers to devote their time to

strategic planning, policy formulation and overall coordination.

5. The decentralised organisation structure is an excellent training ground for grooming up top management personnel. It improves the decision making ability and the other management skills among managers that enable them to move upward in the organisation hierarchy. Thus, on the one hand it motivates managerial staff by making them capable of getting promotion and on the other hand it ensures the continuity of leadership to the organisation.
6. It enables the organisation to grow faster by diversifying into the potential areas of business.
7. It ensures the better implementation of decisions as they are taken by those managers who have to actually implement them in the organisation.

24.3 COSTS OF DECENTRALISED ORGANISATIONS

1. The managers of a decentralised organisation may take such decisions which are not in the best interest of the organisation. This may happen either because the managers have attempted to improve their division results at the cost of organisational results or because they are not aware of the relevant facts of the rest of organisation.
2. The managers in the decentralised organisation may follow different policies in their respective units. Thus a decentralised organisation normally lacks the advantage of uniformity.
3. In a decentralised organisation there may be duplication of some central activities like accounting, advertising, personnel etc. It will enhance the cost of decentralised structures.
4. High degree of decentralisation makes it difficult for the top management to coordinate the overall activities of the organisation. Lack of coordination will also make it difficult for the top management to exercise control over decentralised units. Moreover the costs of controlling will be higher as the top management needs more information to evaluate these units and their managers.
5. In a decentralised organisation structure the units waste more time in negotiating transfer pricing of goods or services with each other.
6. Decentralized structures require that sufficient number of competent executives, who can be entrusted with the authority for decision-making, will be available for manning the divisions. Such competent executives who are capable and willing to assume high degree responsibility are not always available.

24.4 FACTORS AFFECTING DEGREE OF DECENTRALISATION

Decentralisation is not right for every firm. It was observed in the past that many companies of an industry have preferred to reverse their trend toward decentralisation at times when many other still preferred to adopt decentralisation. The International airline industry in mid 1990‘s is one such example. The choice of a right degree of decentralisation in an organisation depends upon a number of factors which are discussed below:

1. Nature of Environment : The organisations which operate in the stable and certain environment would work well in the centralised structures. They could develop the standard operating procedures for their well understood environment. On the other hand an organisation which operates in a highly dynamic environment needs greater degree of decentralisation to enable its managers to respond quickly to the changes in environment.
2. Size of Organisation : The organisation need for decentralisation increases with

the increase in its size. In a small organisation one manager can take effective decisions affecting the whole organisation. But with an increase in the size of organisation the diseconomies of centralisation increases and hence motivates the organisation to adapt high degree of decentralisation.

3. Area of Operation : For an organisation whose operations are primarily localised low degree of decentralisation would be better. On the other hand an organisation whose operations are geographically dispersed over a wider region should prefer a relatively higher degree of decentralisation. Further an organisation like ITC or Reliance Industries which is engaged in diversified businesses needs higher degree of decentralisation.

4. Management Philosophy : It refers to the management's desire to centralise or decentralise the authority. Some managers are interested to retain power and the decision making authority at the top and hence prefer low degree of decentralisation. On the other hand there are managers who do not mind the decisions being taken at the lower levels of management thus prefer high degree of decentralisation.

5. Ability of Subordinate Managers ; Suitability of the degree of decentralisation also depends on the ability of lower level managers. If the subordinate managers in the organisation are inspiring, innovative and analytical then the high degree of decentralisation would be better. But if they lack these abilities or fear from the high level of responsibilities then it is always safe to adopt low degree of decentralisation.

6. Cost involved in decision making : The decisions which involve huge funds or efforts should always be preferred to be taken at the centralised level and vice-versa. Moreover, the decisions which are highly risky should also be preferred to be taken at the top level.

7. Organisation History : The organisation should also analyse its past experiences to decide the appropriate degree of decentralisation. If in the past the organisation has enjoyed favourable response from its employees to decentralisation then it should also prefer high degree of decentralisation in future and vice-versa.

24.5 RESPONSIBILITY ACCOUNTING AND RESPONSIBILITY CENTRES

Responsibility accounting is a system of accounting under which the whole organisation is divided into manageable units/parts called responsibility centres. For managing the performance of these units the responsibility is assigned to the segment managers called responsibility centre heads. The concept of responsibility accounting is based on the idea that an organisation is a group of individuals where everyone is working to achieve some common goal. Thus more is the contribution of each individual better are the chances of organisation's achieving its goal. Responsibility accounting thus recognises the various individuals in the organisation who have any control over the cost or the revenue as a separate responsibility centre and believe that their stewardship must be defined, measured and reported upward in the organisation.

In words of Charles T. Homgren "Responsibility Accounting is a system of accounting that recognizes various responsibility centers throughout the organization and reflects the plans and actions of each of these centers by assigning particular revenues and costs to the one having the pertinent responsibility. It is also chilled profitability accounting and activity accounting".

Robert Anthony defines Responsibility Accounting as "that type of management accounting that collects and reports both planned and actual accounting information in terms of responsibility centers."

From the above definitions it is clear that responsibility accounting is an accounting system, which collects and report both planned and actual accounting data in terms of subunits, which are recognized as responsibility centers. There are four types of responsibility centers :

(1) Cost Centre : A cost centre or an expense centre is that part of the organization whose manager is held responsible for the cost incurred. It refers to those units of the organization which incurs cost but generate no direct revenue. An example is the production department of a manufacturing company. A cost centre can be any defined geographical area, a machine or a person to whom the direct or indirect costs are allocated. The performance of a cost center is measured by comparing actual costs with budgeted costs or standard costs for a specified period of time. Cost centre managers are responsible for the costs that are controllable by them and their subordinates. The cost centers can be divided into two categories :

(a) Standard Coat Centre : It refers to those responsibility centers for which a well defined relationship exists between the input and the output. Such a relationship is commonly found in the production department where there exists a fixed or standard relationship between different elements of cost and the finished production. To control the performance of such responsibility centers normally the actual cost incurred is compared with the already set standard cost.

(b) Discretionary Cost Centre : It refers to those responsibility centers where a well defined relationship between inputs and outputs do not exist. Moreover the output of such centers cannot be measured in money terms. Accounting, research and development, Advertisement etc. are the examples of such cost centers. For most of these centers budgets are laid down and the managers have the responsibility to adhere to the budgeted limits of expenditure.

(2) Revenue Centre : It refers to that unit of the organization whose manager is primarily responsible for the generation of revenues, for example, sales department. The performance of revenue centers is evaluated by comparing the actual revenue with the budgeted revenue. However such an evaluation may not always be beneficial as these revenue centers may attempt to increase their revenues by incurring more marketing expenses.

(3) Profit Centre : A profit centre refers to that unit of the organization whose manager is responsible for tiie profit generated, by *the* ~~unit~~. profit is the excess of revenues over cost thus the manager of such a unit has the control over both, that is, the costs incurred in the unit as well as over the revenues generated by the unit. A division of a company where its manager is controlling both the manufacturing and the marketing of the product can be called a profit centre. Similarly, a branch of a company where the branch head has the control over the expenses and the revenues of the branch can be called a profit centre. The performance of a profit centre is evaluated by comparing its actual profit with the budgeted profit. The use of profit centers in the organization motivates managers to take decisions that enhance surplus rather than taking a myopic functional view. A revenue centre head may take a functional view by increasing its sales by incurring huge marketing costs. Thus the use of profit centre in the organization enhances goal congruence. To ensure that the efforts of cost centre managers or revenue centre managers are also in the overall organizational interest these centers may be converted into profit centers by using the concept of transfer prices. Transfer prices refer to the price at which a product is transferred by one department of the organization to the other department. In short it is a price charged for inter departmental transfers. The concept of transfer price and its role in managerial control is

explained later in the chapter.

(4) Investment Centre : It refers to that unit of the organization the head of which is responsible for the profit as well as investment made in the department. Heads of subsidiary companies can be called profit centers as they have complete control on the investment made in their subsidiaries and also on the profit generated. Besides generating income and planning for expenses the managers of investment centers also has the authority and responsibility to acquire assets, dispose off assets and seek to earn a good return on center's asset base. Managers of investment centers are supposed to earn a satisfactory return on the investment made in their responsibility centers. Some of the important measures for evaluating the performance of investment centers are Return on Capital employee, return on investment, economic value added and residual income. These performance evaluation measures are discussed next in the chapter.

24.6 PERFORMANCE MEASURES FOR DECENTRALISED ORGANISATIONS

Performance measures are the central component of management control systems. These performance measures should not only be effective but should also motivate managers to create a healthy competition among employees. To ensure the effective evaluation of various divisions of an organisation the performance measures should be both financial and non-financial. Generally the performance of various decentralised units is measured by combining the profits and investment into a single performance measure. The three popularly used performance measures are:

(1) Return On Investment (ROI)
(2) Residual Income (RI)
(3) Economic Value Added (EVA)

24.6.1 RETURN ON INVESTMENT

It is the most widely used technique for measuring financial performance. This measure expresses the divisional profits as a percentage of organisation's investment in the division.

Mathematically,

ROI • Divisional Profit / Divisional Investment

The ROI ratio can also be expressed as the product of two ratios, that is, net profit margin ratio and the assets turnover ratio.

Mathematically,

ROI - {(Net Profit / Sales) * (Sales / Capital Employed)] * 100

The net profit margin ratio is the result of firm’s pricing policy and its cost control. The asset turnover ratio shows that whether a firm has under-utilised or over-utilised its assets. While using this performance measure in practice there may be variations in formula among different companies. Some may prefer to use net operating income in place of net income and net operating assets in place of total assets or capital employed. The important point to be considered is that the definition of income used should be consistent with the denominator. Moreover the use of total assets or the operating assets in base should depend on the fact that which of the two is controllable at the level of responsibility center head.

ROI was first used by the Du Pont Company of USA, which recognised the importance of both profit margin and turnover of assets in assessing the performance of a division. It is now recognised as one of the best measures to judge performance of a manager when he is in control of an investment center. A manager can improve his division's ROI by adopting any or

all of the following alternatives:

(a) A decrease in operating costs

A decrease in operating costs, whether fixed or variable, will lead to an improvement in the profit margins thereby affecting the ROI positively. Suppose that a division is earning Net Operating Profit of Rs. 20000/- on an investment of Rs. 100000/-. If the sales of the division arc Rs. 200000/- then its ROI works out to be 20 percent. Now if the divisional head controls its expenditure by Rs. 3000/- and thus boosts its operating profits to Rs. 23000/- then the ROI of the division would increase to 23 per cent.

(b) An increase in Sales Price or Sales Volume

A divisional head can also improve his division's ROI, either by increasing the sales price or by increasing the sales volume. Though a cursory look at the formula of ROI gives the impression that any change in sales figure do not affect the ROI as the sales figure is present both at the numerator's place and the denominator s place and hence is cancelled out. However the reality is that any increase in the sales figure will lead to an improvement in the profit figure too, which will ultimately boost its ROI.

(c) A reduction in the divisional investment

A divisional head can also improve his division's profitability by reducing the investment made in the operating assets. This can be done either by paring out obsolete or redundant machinery or inventory or by speeding up the process of collecting receivables. Any such reduction in the operating assets will improve division's assets turnover and hence it's ROI. For example, if the manager reduces investment in the operating assets by Rs. 10000/- to Rs. 90000/- in the above example then the divisions ROI would improve to 22.22 percent from 20 percent.

Advantages of ROI

1. It is the most widely used, accepted and understood measure of divisional performance.
2. It encourages managers to acquire assets that will provide a satisfactory return on investment and to dispose those assets that are not providing acceptable returns, thus improves capital investment decisions.
3. It provides a strong incentive for optimum utilisation of division's assets.
4. As ROI is a ratio, it is suitable for comparative analysis. It is commonly used to do inter-divisional or inter-firm performance comparison.

Limitations of ROI

1. It is very difficult to find a satisfactory definition of the term profit and investment. The term profit has several meanings such as Profit before interest and tax, profit after interest and tax, operating profit, net profit etc. Similarly the term investment may either refer to gross book value of assets, net book value of assets, historical costs of assets or current cost of assets, assets including or excluding the value of intangible assets.
2. The ROI approach provides different incentives for investments across business units. For example, a business unit, which is currently earning an ROI of 25 percent would be reluctant to expand unless it is able to earn an ROI of 25 percent or more on additional investment. Any fresh investment if accepted with a lower ROI would decrease the overall ROI of the division. Thus a

business unit might forego an investment opportunity whose ROl is well above the enterprise cost of capital but lower than the unit's present ROI. Similarly a business unit that is currently achieving a low ROI, say seven percent would decide to make fresh investment if it provides a return of more than seven percent thereby enabling it to improve the unit's ROI. Consequently a business unit might select an investment whose ROI is well below the enterprise cost of capital but higher than the unit's present ROI. Such decisions of different units are sub optimal and hence can distort an enterprise overall allocation of resources.

3. ROI is based on historical data and hence do not consider the impact of time value of money.
4. The method of computing investment base may tend to motivate managers to take such decisions, which are not congruent with the interests of the enterprise nas a whole. When original cost price of assets is used as an investment then the manager may dispose of a useful asset whose profit contribution is less than the divisional ROI, as the disposal of such asset leads to the reduction in investment base equal to the original cost price of asset. On the other hand the use of net book value to compute investment would weaken the interest of manager to add new any new assets as for such additional investment the book value will be equal to the cost price of assets.

24.6.2 RESIDUAL INCOME

Residual Income (RI) is the net operating income, which a division is able to. earn above some minimum required rate of return. The minimum required rate of return is normally equal to the weighted average cost of capital of the enterprise. The weighted average cost of capital of the enterprise, which is also termed as imputed interest rate, is multiplied with the average operating assets of the division to determine imputed capital charge. Finally the division's residual income is obtained by subtracting the imputed capital charge from the operating income of the division.

Mathematically,

RI - Divisional Profit - (Percentage capital charge or imputed interest rate * Divisional investment]

Example : If a division's is earning a profit of Rs. 100000/- on an investment of Rs. 400000/- and its minimum required rate of return on invested funds is 15 percent then according to the above formula its RI will be Rs. 40000/-.

Here, it must be noted that the residual income as a measure of performance is an absolute figure in rupees as compared to ROI, which was a ratio or percentage. When RI is used as a measure of performance the aim of division managers is to maximise the residual income figure rather than maximising its ROI.

Advantages of Residual Income (RI)

(1) It avoids sub optimal decisions, as investments are not rejected merely because they lower the divisional manager's ROI.

Example : Suppose a division of an enterprise is earning a return of Rs. 10000/- on an investment of Rs. 50000/- thereby generating a ROI of 20 percent. The division got a new opportunity of making an additional investment of Rs. 25000/- for generating an additional return at the rate of 16 percent. The manager of the division would reject this opportunity as accepting it could have lowered his division's overall ROI as shown below :

	Present Investment	New Investment	Aggregate
(a) Average operating assets (in Rs.)	50000	25000	75000
(b) Net Operating Income (in Rs.)	10000	4000	14000
ROI - (b) / (a)	20%	16%	18.67%

However if the minimum required rate of return is 12 percent then such an additional investment would add to the residual income of the division as shown in table below and hence should be accepted.

	Present Investment	New Investment	Aggregate
Average operating assets (in Rs.)	50000	25000	75000
(1) Net Operating Income (in Rs.)	10000	4000	14000
(2) Minimum Required return on invested funds @ 12%	6000	3000	9000
RI - (1) - (2) (in Rs.)	4000	1000	5000

Thus, Residual Income method covers the shortcoming of the ROI method under which a division manager might act contrary to the interest of enterprise as a whole.

(2) It maximises the growth of enterprise and increases shareholders wealth by accepting opportunities, which earn a rate of return in excess of the cost of capital.

(3) It makes the divisional managers cost conscious by letting them aware of opportunity cost of funds.

(4) The residual income method is flexible as the different imputed rates of return can be applied to investments that have different levels of risk.

Limitations of Residual Income (RI)

(1) Besides the problem of having a satisfactory definition of the terms divisional income and divisional investment the residual income suffers from one more limitation i.e. the problem of having an accurate measurement of the cost of capital of various investment opportunities.

(2) Residual income is in absolute figures and not in percentages, and hence cannot be readily used for inter-divisional comparisons.

(3) Like ROI it is also based on historical data .thus do not consider the impact of time value of money.

24.6.3ECONOMIC VALUE ADDED

The term Economic Value Added is the modified version of the residual income concept. Stern Stewart & Co. was the first one to introduce it in year 1990.The concept of EVA encourages divisional managers to act like owners and improve the value of their divisions. The divisions create value only if their returns are in excess of their cost of capital. The EVA measures whether the divisions operating profits are sufficient enough to cover their cost of capital. If the EVA of division is negative then the division is destroying value even though it may be reporting positive or growing return on capital employed. EVA is thus a way of measuring divisions real profitability. Mathematically EVA of a division can be measured as follows :

EVA = NOPAT - (DCE X WACC)

Where,

NOPAT - Division's After Tax Operating Income DCE » Division's Capital Employed WACC - Weighted Average Cost of Capital While computing the divisions operating income the non operating items like dividend / interest on securities invested outside the business and the non operating expenses etc. will not be considered. Further the division's capital employed will not include any funds invested outside the business. For computing the WACC the cost of debt is taken on after tax basis and the cost of equity funds is ascertained on the basis of Capital Asset Pricing Model. (CAPM)

Illustration : Compute EVA from the following data for the year ending 31st March 2008 : Debt Rs. 100 Cr.

Equity	Rs. 2700 Cr.
Profit After Tax, before exceptional item	Rs. 1500 Cr.
Interest after taxes	Rs. 10 Cr.
After Tax cost of Debt	7.5%
Cost of equity	16%

Solution:

Source	Amount (Rs. Cr.)	Proportion	Cost of Capital (%)	WACC (%)
Debt	100	.0357	7.5	0.26775
Equity	2700	.9643	16	15.4288
TOTAL	2800	1.0000		15.69655

Cost of Capital Employed ■ 2800 X 15.70 - 439.6 Cr.

Adjusted Operating Profit After tax - 1500 + 10 ** 1510 Cr.

EVA - NOPAT - (DCE X WACC)

- 1510 - 439.6 =

Rs. 1070.40 Cr.

EVA's role in Managers Performance Evaluation

Divisional heads compete with each other in order to get more of the organisations scarce capital. To get more funds than those of their counterparts the managers have to perform better. The concept of EVA ensures that managers care about managing assets as well as income and thus helps them to properly assess the trade off between the two. It forces divisional heads to focus on value creating activities rather than time and energy wasting activities. Advantages of EVA

1. EVA is closely related to the concept of NPV. It argues that the value of the firm will increase if one takes positive NPV projects.
2. EVA is easy for layman besides accountants to understand its concept as it is logical and comply with the economic terms of "economic profit."
3. The mechanism of EVA forces management to expressly recognize its cost of equity in all its decisions. It results into the goal congruence of managers and the owners. The technique of EVA uses single measure, that is, the effect on share holders value for taking decisions on different corporate functions like - valuing acquisitions, assessing performance, reviewing capital budgets etc. Thus it removes all inconsistencies that arise from the use of different financial measures for different corporate functions.
4. The compensation system based on EVA ties management interests with those of the shareholders.

Limitations of EVA

1. Like other accounting rate of returns the concept of EVA also considers the value of various assets on the historical cost basis, ignoring inflation. Thus it becomes difficult to ascertain the true rate of return.
2. Since EVA is measured in rupee terms and not in percentage its results are biased in favour of large, low return businesses as compared to small though high return businesses.

Self Check Questions (True/False)

(a) In decentralized organizations, local autonomy can lead to more effective decision-making in response to local conditions.
(b) Return on investment (ROI) is a common performance measurement tool in decentralized organizations that focuses only on financial metrics.
(c) The controllability principle suggests that managers should be held accountable for factors they cannot control.
(d) In a matrix organizational structure, dual reporting relationships may lead to challenges in management control.
(e) Delegated authority in decentralized organizations means all decisions are made centrally at the top levels of management.

24.7 ROLE OF TRANSFER PRICING IN EXERCISING MANAGEMENT CONTROL

A transfer price is the price at which goods (or services) are sold by one division of a company to another division of the same company. In short it is the price charged for inter divisional transfers. The system of transfer pricing plays a significant role, as it enables the management to evaluate accurately the performance of divisions viewed as independent entities. Moreover, it motivates the divisional managers to act in a manner that is in congruence with the larger interest of the organisation. Following are some of the important bases for determining the transfer prices :

1. Market-based transfer prices : In the presence of competitive and stable external markets for the transferred product, many firms use the external market price as the transfer price. Under this technique the supplying division gets the same price which it could get by selling the product in the external market and the buying division is asked to pay the same price which it is supposed to pay the external vendor for such purchases. The market based transfer prices are often considered ideal because the situation is similar to what the divisional managers would face if they were managing the independent companies.

2. Cost-based transfer price : Under this technique the transfer price is based on the production cost of the upstream division. It further bases the transfer price on any of the following costs :

a Actual cost or budgeted (standard) cost.
b. Full cost or variable cost.
c. The amount of markup, if any, to allow the upstream division to earn a profit on the transferred product.

Such a technique of transfer pricing is adopted when either the market prices of the goods transferred do not exist or the management do not wish to disclose the outsiders about the secret ingredient used in the product. Cost based transfer pricing is preferred because it can be easily ascertained from the company records. However it is criticized on the basis that the inefficiency or under capacity may result in cost price being higher than the market price. Moreover there are no incentives to the transferee division.

3. Negotiated transfer price : In this technique senior management does not specify the transfer price. Rather, it is decided by the process of negotiation between the divisional managers of the supplying division and the receiving division. That is why it is also known as the negotiated or the bargained price. However there is no reason to assume that the outcome of these transfer price negotiations will serve the best interests of the company or the shareholders. Here the transfer price depends on the negotiating abilities of the divisional heads. Moreover, if the divisional managers fail to reach an agreement on price, senior management might decide to impose a transfer price. Senior management's imposition of a transfer price defeats the motivation for using a negotiated transfer price in the first place.

Finally it can said that though the choice of the exact method for fixation of transfer price is a matter of concern and it is to be resolved only after carefully considering the pros and cons of the different basis of transfer pricing. Yet the existence of a system of transfer pricing is must for exercising management control in the decentralised organizations. In summary:

- A decentralised organisation refers to that organisation which is broken into various divisions in accordance with the products or services it offers. The term decentralisation means the process of delegating decision making authority down the organization hierarchy. The term centralization refers to the conditions where much of the decision making authority is retained at the top of managerial hierarchy.
- Decentralisation is a matter of degree along a continuum. The extent of degree of decentralization is determined by the nature of authority delegated, how far down in the organization hierarchy it is delegated and how consistently it is delegated.
- Responsibility accounting is a system of accounting under which the whole organisation is divided into manageable units/parts called responsibility centres. For managing the performance of these units the responsibility is assigned to the segment managers called responsibility centre heads. There are four types of responsibility centers namely, cost center, revenue center, profit center and investment center.
- The performance of various decentralised units is measured by combining the profits and investment into a single performance measure. The three popularly used performance measures are, Return on Investment (ROI), Residual Income (RI) and Economic Value Added (EVA).
- A transfer price is the price at which goods (or services) are sold by one division of a company to another division of the same company. The system of transfer pricing plays a significant role, as it enables the management to evaluate accurately the performance of divisions viewed as independent entities. Transfer prices can be based on market price basis, cost price basis or the negotiated price basis.

24.8 KEYWORDS

Decentralized Organizations: Organizational structures where decision-making authority is dispersed among various local units.

Return on Investment (ROI): A performance measurement tool that evaluates the financial performance of decentralized units.

Responsibility Center: A unit or department in a decentralized organization responsible for specific costs and revenues.

Transfer Pricing: The pricing mechanism used to facilitate the exchange of goods and services between decentralized units.

Balanced Scorecard: A comprehensive performance measurement tool in decentralized organizations, integrating financial and non-financial metrics.

Delegated Authority: Empowering local managers in decentralized organizations with decision-making power.

24.8 Self Check Exercise

Short Answer Questions

(f) Discuss the role of a responsibility center in management control and how it differs from a profit center.

(g) How does a transfer pricing system contribute to effective coordination between decentralized units in an organization?

(h) Explain the significance of a balanced scorecard in the management control system of decentralized organizations.

(i) Discuss the challenges and benefits of using information technology for management control in decentralized organizations.

Long Answer Questions

1. Describe and compare the major performance measures that have been suggested to measure the divisional performance.
2. Find the missing data in the following table :

Particulars	Division I	Division II	Division III
Sales	Rs. 120000	Rs. 150000	Rs. 200000
Operating Income	?	Rs. 50000	?
Operating Assets	Rs. 60000	?	Rs. 100000
ROI	15%	10%	20%
Minimum Required Return	10%	?	?
RI	?	Rs. 10000	0

3. Analyze a case study where the implementation of decentralized management control systems led to significant improvements in organizational efficiency.
4. Examine the impact of the controllability principle on the performance evaluation of managers in decentralized organizations, considering its benefits and potential drawbacks.
5. Discuss the role of performance measurement tools, such as return on investment (ROI), in evaluating the effectiveness of decentralized units within an organization.

24.9 ANSWER KEYS (Self Check Exercise)

(a) True
(b) False
(c) False
(d) True
(e) False