

MBA-103

ACCOUNTING FOR MANAGERS



DIRECTORATE OF DISTANCE EDUCATION

SWAMI VIVEKANAND

SUBHARTI UNIVERSITY

Meerut (National Capital Region Delhi)

Contents

1. Meaning and Scope of Accounting	1-19
1.1. Book-Keeping	1
1.2. Accounting	2
1.3. Development of Accounting	4
1.4. Objectives of Accounting	5
1.5. Advantages of Accounting	6
1.6. Limitations of Accounting	7
1.7. Types or Sub-Fields/Branches of Accounting Information	8
1.8. Users of Accounting Information	9
1.9. Basic Accounting Terminology	9
1.10. Summary	19
1.11. Review Questions	19
2. Accounting Principles	20-41
2.1. Introduction	20
2.2. Meaning of GAAP	20
2.3. Basic Accounting Concepts	21
2.4. Accounting Equation/Cycle	24
2.5. Computation-Classification of Transactions	26
2.6. Summary	39
2.7. Review Questions	40
3. Preparation of Final Accounts	42-91
3.1. Introduction	42
3.2. Recording of Business Transaction-Basis of Accounting	43
3.3. Single Entry System of Book-Keeping	44
3.4. Double Entry System of Book-Keeping	44
3.5. Classification of Accounts	45
3.6. Rules of Double Entry (or) Accounting Rules	46
3.7. Accounting Cycle	46
3.8. Books of Accounts: Recording, Posting and Preparation of Trial Balance	47
3.9. Trial Balance	57
3.10. Final Accounts	61
3.11. Adjustment	64
3.12. Summary	83
3.13. Review Questions	84
4. Fund Flow Statement	92-115
4.1. Introduction	92
4.2. Meaning of Fund Flow Statement	92
4.3. Different Names of Fund Flow Statement	92
4.4. Managerial Uses of Fund Flow Statement	93

4.5. Limitations of Fund Flow Statement	.93
4.6. Steps in Preparation of Fund Flow Statement	94
4.7. Summary	110
4.8. Review Questions	110
5. Cash Flow Statement	116–139
5.1. Introduction	116
5.2. Limitations of Cash Flow Analysis	117
5.3. Difference between Cash Flow Analysis and Fund Flow Analysis	117
5.4. Steps in Preparation of Cash Flow Statement	118
5.5. Summary	136
5.6. Review Questions	136
6. Ratio Analysis	140–165
6.1. Meaning	140
6.2. Significance of Ratio Analysis	140
6.3. Advantages of Ratio Analysis	140
6.4. Limitations of Ratio Analysis	141
6.5. Classification of Ratios	142
6.6. Summary	160
6.7. Review Questions	160
7. Cost and Management Accounting	166–175
7.1. Cost Management—An Introduction	166
7.2. Cost Management System	167
7.3. Cost Accounting	167
7.4. Management Accounting	168
7.5. Cost Accounting vs. Financial Accounting	172
7.6. Cost Accounting vs. Management Accounting	173
7.7. Management Accounting vs. Financial Accounting	173
7.8. Summary	174
7.9. Review Questions	175
8. Branch Accounts	176–184
8.1. Introduction	176
8.2. Classifications of Cost	176
8.3. Meaning of Overheads	180
8.4. Departmentalisation of Overheads	180
8.5. Principles of Overheads Apportionment	181
8.6. Summary	183
8.7. Review Questions	184
9. Marginal Costing and Cost Volume Profit Analysis	185–207
9.1. Introduction	185
9.2. Meaning of Absorption Costing	185
9.3. Meaning of Marginal Costing	186
9.4. Methods for Segregation of Semi-Variable Cost	190
9.5. Marginal Costing and Decision-making	194

9.6. Cost-Volume-Profit Analysis	197
9.7. Methods of Break-even Analysis	197
9.8. Limitation of Break-even Analysis	205
9.9. Summary	206
9.10. Review Questions	206
10. Budgetary Control	208–237
10.1. Budget—An Introduction	208
10.2. Concept of Budgetary Control	209
10.3. Organisation for Budgetary Control System	213
10.4. Types of Budget	215
10.5. Zero-Base Budgeting	231
10.6. Programme Budgeting	233
10.7. Performance Budgeting	234
10.8. Summary	235
10.9. Review Questions	236
11. Neo Concept for Decision-Making	238–260
11.1. Introduction to Activity-Based Management (ABM)	238
11.2. Activity-Based Costing (ABC)	239
11.3. Cost Driver	241
11.4. Introduction to Value Chain Analysis	250
11.5. Introduction to Target Costing	252
11.6. Introduction to Life-cycle Costing	254
11.7. Summary	259
11.8. Review Questions	259

SYLLABUS

MBA-I Semester-I Year

ACCOUNTING FOR MANAGERS

MBA-103

Course Code: MBA 103		
Course Credit: 04	Lecture: 03	Tutorial: 01
Course Type:	Core Course	
Lectures delivered:	40	

End Semester Examination System

Maximum Marks Allotted	Minimum Pass Marks	Time Allowed
70	28	3 Hours

Continuous Comprehensive Assessment (CCA) Pattern

Tests	Assignment/ Tutorial/ Presentation/class test	Attendance	Total
15	5	10	30

Course Objective: The main objective of this course is to make the students familiar with fundamental concepts and process of accounting, significant tools & techniques of financial analysis which form an important part of management planning & financial control system and help the management in resolving problems effectively.

UNIT	Course Content	Hours
I	Financial Accounting- Definition, Advantages, limitations and Users of Accounting Information, Accounting Principles and Standards, Accounting Equation.	8
II	Mechanics of Accounting : Double Entry System of Accounting, Journalizing & Posting of Transactions; Preparation of Trial Balance, Final Accounts: Profit & Loss Account, Profit & Loss Appropriation Account and Balance Sheet.	8
III	Tools of Analysis of Financial Statements - Ratio Analysis- Solvency Ratios, Profitability Ratios, Activity Ratios, Liquidity Ratios, Market Capitalization Ratios; Preparation of Funds and Cash Flow Statement and its Analysis,	8
IV	Cost and Management Accounting- Definition, Features, Comparison between Management Accounting and Cost Accounting. Types of Cost, Cost Volume Profit Analysis-Break Even Analysis, P/V Ratio Analysis and their Implications.	8
V	Budgeting: Concept of Budget, Budgetary Control, Advantages and Limitations of Budgetary Control, Types of Budget-Static and Flexible Budget, Cash Budget, Sales Budget and Master Budget.	8

Text and Reference

Books

1. S.N. Maheshwari- Financial & Management Accounting, Sultan chand & sons publication.
2. Mukherjee-Financial Accounting for Management, Tata McGraw Hill Publishing
3. Amrish Gupta- Financial Accounting: A Managerial Perspective, Prentice Hall Publication.

4. Sinha- Accounting & Costing for Management, Excel Books.
5. I.M. Pandey- Management Accounting, Vikas Publishing House Pvt Ltd
6. M Y Khan & P K Jain, Management Accounting, Tata McGraw Publishing
7. S.N Maheshwari & S.K. Maheshwari, A Text Book of Accounting For Management,(Vikas Publication)
8. M.N. Arora, Text Book of Cost & Management Accounting, (Vikas Publication)
9. Debarshi Bhattacharya, Management Accounting, (Pearson Publication)

Meaning and Scope of Accounting

Notes

Structure

- 1.1. Book-Keeping
- 1.2. Accounting
- 1.3. Development of Accounting
- 1.4. Objectives of Accounting
- 1.5. Advantages of Accounting
- 1.6. Limitations of Accounting
- 1.7. Types or Sub-Fields/Branches of Accounting Information
- 1.8. Users of Accounting Information
- 1.9. Basic Accounting Terminology
- 1.10. Summary
- 1.11. Review Questions

1.1. Book-Keeping

Meaning

Book-keeping is the proper and systematic keeping or maintenance of the books of accounts. Book-keeping starts from the identification of business transactions. These transactions must be supported by the documents and they must be financial in nature. For example, selling goods for cash is an accounting transaction, because cash is received and goods are going outside the business. The transaction will increase cash and reduce goods.

It will affect the finance of the business. There will also be documentary proof of the transaction because cash memo must have been issued for sale. The book-keeper after identification of the accounting transaction will record it in the proper books of accounts.

Definition

Book-keeping may be defined as the science and art of identifying and recording accounting transactions systematically in the proper books of accounts.

According to **North Cott**, "*Book-keeping is the art of recording in the books of accounts the monetary aspect of commercial or financial transactions.*"

Prof. R.N. Carter defines, "*Book-keeping as the science and art of correctly recording in the books of accounts all those business transactions that result in the transfer of money or money's worth.*"

Book-keeping is concerned with the proper maintenance of the books of accounts i.e., journal, ledger, cash book and other subsidiary books. *It is not concerned with disclosing or interpreting the results of the business.* Book-keeping involves the following process:

Notes

Process of Book-keeping

1. **Identifying Accounting Transactions:** All business transactions which are financial in nature and have documentary proof are accounting transactions. Non-economic activities concerning emotions of love, patriotism and respect do not find place in Book-keeping.
2. **Initial Record of Accounting Transactions:** The identified accounting transactions are passed through subsidiary books, such as purchases book, sales book, returns inward book, returns outward book, bills receivable book, bills payable book, cash book and journal proper.
3. **Preparation of Ledger Accounts:** All the transactions relating to a particular person, party or item are put together at one place under one head, which is known as its ledger account. For example, information regarding sales to Ram, amount received from Ram, discount allowed to Ram and so further sales and receipt of the amount should be written in Ram's Ledger Account. This will enable us in understanding the actual position of Ram's dealings at a glance. With the help of subsidiary books and journal proper all ledger accounts are prepared.
4. **Balancing Ledger Accounts:** Ledger accounts are balanced, i.e., the difference between the debit and credit side of the ledger accounts are ascertained. Personal accounts show the amount payable to or receivable from them. Assets accounts show the value of assets on a particular date. Ledger accounts, thus, reveal the balances of expenses, revenue, liability, capital and assets.
5. **Preparation of Trial Balance:** Trial balance is prepared with the balances shown by the ledger accounts. While passing journal entries and preparing subsidiary books we take into consideration the dual aspect of every transaction, so the debit and credit balance of the trial balance must tally. Trial balance is prepared to check arithmetical accuracy. If the totals of the debit and credit side of the trial balance is not equal, there must be certain errors. These errors are located and rectified.

1.2. Accounting

Every business has profit motive. It has transactions of financial nature, such as, purchasing goods, selling goods, incurring expenses, receiving income, etc. These transactions are financial in nature and affect the profit of the business. Accounting transactions are both money transactions and money worth transactions. Credit transactions are known as money worth transactions. It means that accounting transactions may not be necessarily cash transactions.

Transactions are classified as assets, liabilities, capital, revenues and expenses. Income statements are prepared to ascertain profit or loss of the business. The position

statement is prepared to assess the value of assets and liabilities of the business. Various statements are prepared and ratios are calculated to measure the actual performance of the business. Comparison of the actual performance is compared with previous performance or desired performance and effective plans for future is made. In this way, *accounting is an art of identifying, classifying, recording, summarising and interpreting business transactions of financial nature.* The process of maintaining accountancy records contains the following steps:

All financial transactions which have documentary evidence are identified as accounting transactions. The elements of the transactions are classified as assets, liabilities, capital, revenues and expenses. These transactions are recorded in the appropriate books of accounts. Income statements are prepared to ascertain profit or loss of the business during accounting period. Position statements are prepared to ascertain assets and liabilities of the business. Finally, result of the business transactions are communicated.

Definition of Accounting

In the words of **Smith and Ashburne**, "*Accounting is a means of measuring and reporting the results of economic activities.*"

In the opinion of **Bierman and Derbin**. "*Accounting may be defined as the identifying, measuring, recording and communicating of financial information.*"

Difference between Book-Keeping and Accounting

Points of difference	Book-keeping	Accounting
1. Objective	The objective of book-keeping is to prepare original books of accounts. It is restricted to journal, subsidiary books and ledger accounts only.	The objective of accounting is to record, analyse and interpret the business transactions.
2. Scope	It has limited scope and is concerned with the recording of business transactions.	It has wider scope as compared to book-keeping.
3. Level of work	It is restricted to low level of work. Clerical work is involved in it.	It is concerned with low level, medium level and even top level management. Low level clerks prepare the accounts, medium level report it and top level interpret it.
4. Mutual dependence	Book-keeping is only the art of recording transactions, so it has to depend upon accounting which makes it more meaningful and purposeful.	Accounting is based upon book-keeping which is its initial and vital part. It depends upon book-keeping.

Notes

5. Results of the business	It does not show the net result of the financial position of business.	Accounting shows the net result of the business. It tells us about the profit earned and also about the assets and liabilities of the business.
6. Principles of Accounting	In book-keeping, accounting concepts and conventions are followed	The methods of reporting and interpretation in accounting may vary from firm to firm.

1.3. Development of Accounting

The role of accounting has changed from that of a mere record keeping during the 1st decade of 20th century to the present stage, when it is accepted as **information system and decision-making activity**.

The term accounting is becoming gradually broader. It is evident from **definitions of accounting** arranged in historical order:

- (i) **1941:** The American Institute of Certified Public Accountants (AICPA) defined accounting as:

The art of recording, classifying and summarising in a significant manner and in terms of money transactions and events, which are in part, at least, of a financial character and interpreting the result thereof.

- (ii) **1966:** The American Accounting Association (AAA) defined accounting as:

The process of identifying, measuring and communicating economic information to permit informed judgements and decisions by uses of the information.

- (iii) **1970:** Accounting Principles Board (APB) and AICPA states:

The function of Accounting is to provide quantitative information primarily financial in nature, about economic entities, that is intended to be useful in making economic decisions.

The above statements about Accounting show that the role of Accounting is gradually widening.

The role of accounting at present is assumed:

- (i) To provide information for judging management ability to utilise resources effectively in achieving goals.
- (ii) To provide factual and interpretative information by disclosing underlying assumptions on matters, subject to interpretation, evaluation, prediction or estimation and
- (iii) To provide information or activities affecting society.

Accounting in this way, identifies business transactions, records them in proper subsidiary books and journal proper and prepares ledger accounts. Trial balance is prepared with the balance of ledger accounts and finally financial statements are prepared, reported and communicated to parties concerned.

1.4. Objectives of Accounting

Followings are the objectives of accounting:

1. **Maintaining Proper Record of Business Transaction:** The main purpose of accounting is to identify business transactions of financial nature and enter them into appropriate books of accounts. Business transactions are classified as, assets, liabilities, capital, revenues, expenses and accordingly passed through books. The accounting records should be made properly and systematically, so that requisite information may be obtained at a glance from the books of accounts.
2. **Calculation of Profit or Loss:** One of the main object of accounting is to calculate the profit or loss of the business. Income statements are prepared with the help of trial balance (prepared with the balances of ledger accounts). At the end of accounting period, we prepare Trading Account and ascertain gross profit or gross loss. Afterwards Profit and Loss Account is prepared to calculate net profit or net loss. Accounting in this way, is the source to evaluate the performance of the business in terms of profit.
3. **Depiction of the Financial Position:** At the end of accounting period, we prepare position statement. The value of assets and liabilities are depicted in the balance sheet, also known as position statement.

The assets side of the balance sheet shows the position of various assets such as cash in hand, cash at bank, sundry debtors, closing stock, building, machinery, furniture, etc. The liabilities side shows creditors' claim as creditors' for goods, bills payable, loans, outstanding expenses and proprietor's claim as capital, net profit and reserves. Balance Sheet is said to be a mirror, reflecting the true position of assets and liabilities on a particular date.
4. **Providing Effective Control Over the Business:** Accounting reveals the actual performance of the business in terms of production, sales, profit, loss, cost of production and the book value of sundry assets. The actual performance can be compared with the planned or desired performance of the business. It can also be compared with the previous performance. Comparison reveals deviation in terms of weaknesses and plus points. Causes responsible for the poor performance are identified and efforts are made to remove them. Causes responsible for better performance are reinforced. Accounting, in this way, enables the management to adopt effective control over the business.
5. **Making Information Available to Various Groups:** Business, these days is a social institution. In addition to the owners of the business various groups, such as, creditors, lenders, investors, researchers, government and even workers and consumers have an interest in the performance of business. Accounting makes information available to all these interested parties. Proprietors have interest in the profit or dividend, debenture holders, lenders and investors are concerned with the safety of

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money advanced by them to the business and interest thereon. Financial soundness of the business makes their loans secured. Employees have an interest in their increased wages and bonus. The object of the accounting is to provide meaningful information to all these interested groups.

1.5. Advantages of Accounting

1. **Replacing Memory:** Business transactions are innumerable, varied and complex, as such it is quite impossible to memorise each and every transaction. Accounting records these transactions in writing and thus, it is not necessary that the businessman should memorise all the transactions.
2. **Assisting the Performance of the Business:** Accounting keeps proper and systematic record of all business transactions. Income statements are prepared with these records and we are able to know the profit earned and the loss suffered by the business. Trading Account is prepared to find out gross profit or loss of the enterprise. Net profit or net loss can be known by preparing Profit and Loss Account.
3. **Assessing the Financial Status of the Business:** Financial position of the business is displayed through position statement, *i.e.* Balance Sheet of the business. The statement is prepared at the end of the accounting year and reflects the true position of assets and liabilities of the business on particular date.
4. **Documentary Evidence:** Accounting records can also be used as an evidence in the court of substantiate the claim of the business. These records are based on documentary proof. Every entry is supported by authentic vouchers. That is why, the court accepts these records as evidence.
5. **Assisting in Realisation of Debts:** In 'Accounts' we prepare personal ledger accounts of all the parties. The personal account shows the exact amount due from the debtors. We can send the debtors their statement of accounts and thus enable them to verify entries and also to make early payment of the amount due. The account can also be used to prove the claim of the business against the debtors in the court.
6. **Facilitating the Sale of the Business:** The position statement of the business shows the value of assets and liabilities of the business. We can calculate the 'Net Worth' of the business on the basis of these statements. Accounting facilitates in the calculation of the consideration for which the business should be sold.
7. **Preventing and Detecting Frauds:** The proper accounting system and effective arrangement of internal check prevents leakage of goods and cash. In case, cheating takes place, theft or embezzlement is made and fraud is committed, accounting helps in detection of these losses and also fixes responsibility for it. Proper accounting prevents employees from committing fraud.
8. **Helpful to Management:** Accounting is useful to the management in various ways. It enables the management to assess the achievements of its performance. Actual performance can be compared with the desired

performance or with the performance of previous years. The weaknesses of the business can be identified and corrective measures can be applied to remove them. Various profitability, sales and liquidity ratios can be calculated, the actual performance can be evaluated and effective line of action can be decided for the future. Funds flow statement can also be prepared to understand the additional funds earned during the year and their application.

Full Disclosure: The concept is also known as convention of full disclosure. **Accounting must disclose all material information.** It should be honestly prepared, free from any bias, favour or prejudice. Figures should not be manipulated. It should be the sincere effort of the accountant to present facts, keeping in view the various accounting assumptions. No material information should be concealed. Material information means the information capable of changing the results of the business. Enterprises have their existence separate from their proprietors. In case of companies, there is a divorce between ownership and management. In this context, it becomes binding upon the management to disclose all material information in accounts to its owners and other interested parties.

Disclosure of material facts does not mean leaking out the business secrecy, but disclosing all information of proprietors' and investors', interest. Accounting to this principle, certain unimportant items are left and some of them are merged with other items. The intention is not to over burden Accounting with information but present facts without any malafide intention.

1.6. Limitations of Accounting

Financial Accounting suffers the following limitations:

1. **Records of Monetary Transactions:** Accounting records are maintained only when transactions are expressed in monetary terms. At the same time, those transactions which cannot be measured in monetary terms are not to be recorded. It excludes qualitative elements like management reputation, employee morale, labour strike, etc.
2. **Recording Actual Cost:** Cost concept is found in financial accounting. If the effect of price level changes is not brought into the books, comparison of various years becomes difficult. Financial accounting records are based only on Actual Cost. This type of accounting techniques actually reduces the utilities and usefulness.
3. **Personal Bias of Accountant affects the Accounting Statements:** Normally, Accounting policies are framed by the Accountants. They differ on the use of accounting principles. And at the same time a number of conventions, concepts and postulates have been propounded in accountancy. Their use is greatly affected by the personal judgement of Accountants. Sometime different financial results are obtained from the same concern's financial statements. Because these statements are prepared by two different accountants with varying personal judgement in using or applying particular conventions.
4. **Incomplete Information:** Financial Accounting discloses only the net

Notes

result of the consolidated business transactions. It does not disclose profit or loss of each department's job, process, etc. The product-wise or job-wise cost of production cannot be found out.

5. **Permits Alternative Treatments:** Financial Accounting permits alternative treatments within generally accepted accounting concepts. For example, closing stock may be valued by FIFO or LIFO or average method or market price method. Applications of different methods may give different results and the same time results may not be comparable.
6. **Only Quantitative Information:** Financial Accounting will be taken into account only on those factors which are being quantitatively expressed. But quantifiable information could not be considered. Because the management has to follow the government policies which relate to the Economic development of the country.
7. **Technological Revolution:** Due to the development of Science and Technology, all types of business information and data are needed for effective functioning of the organisation. But financial accounting provides only elementary information. So, this is not enough to meet out the current level of competition.

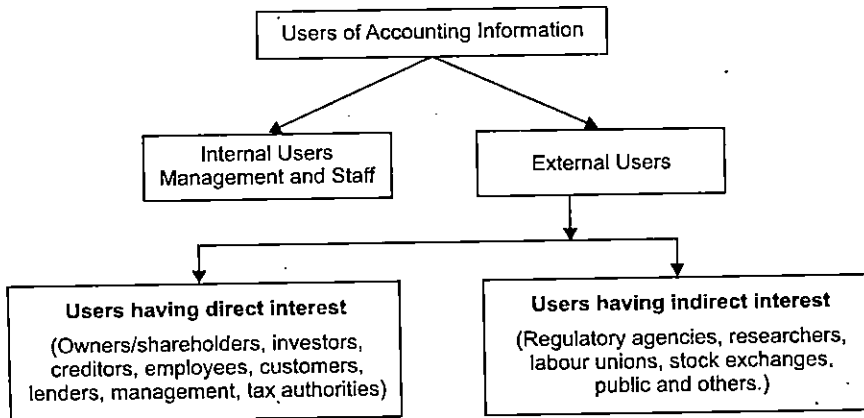
1.7. Types or Sub-Fields/Branches of Accounting Information

Accounting has at present three sub-fields or branches, mentioned as under:

1. **Financial Accounting:** Accounting is a wider and comprehensive concept. It is an art of identifying, classifying, recording, summarising and interpreting business transactions of financial nature. Accounting work involves low, medium and even top level employees. Accounting as such is book-keeping plus preparation of financial statements, reporting the results of the business and interpreting the accounting information in the forms of ratios, funds and cash flow statements, schedules, charts and diagrams.
2. **Cost Accountin:** It is that branch of accounting, which deals with cost of production and its various constituents. It is concerned with the classification, allocation, recording, summarising and reporting current and prospective costs. Cost accounting, like financial accounting serves the needs of proprietors, managers and interested outsiders. Cost accounting is the systematic process of determining unit cost at different levels of production.
3. **Management Accounting:** Management in the business is concerned with decision-making for the efficient working of the enterprise, so management accounting is a system to assemble and furnish the useful material and summarised accounting information to the management. Management accounting as such is the effective blending of financial and cost accounting together with financial management. The ultimate end of management is to maximise profit at the minimum cost and sacrifice. The management accounting serves as an effective tool for determining right line of action in future.

1.8. Users of Accounting Information

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1. **Internal Users:** Top, middle and bottom level of management executives are the internal users of accounting information. They need it for making their decisions. These users are interested in the profitability, operational efficiency and financial soundness of the business. The top level management is concerned with accounting information relating to planning, the middle level is interested in planning and controlling and the lower level with operational affairs.
2. **External Users:** External users may have direct interest or indirect interest.
 - (i) *External users having direct financial interest:* The existing and the prospective creditors and investors have direct interest in the accounting information. The sources of information for external users are financial statements and reports of directors and auditors. Investors assess the financial worth of the business so that they may decide about buying, selling or holding investment in the business. Creditors, such as banks, lenders, debenture holders and financial institutions assess the risk involved in granting loans to the business.
 - (ii) *External users having indirect interest:* These users, such as Department of Company Affairs, Registrar of Joint Stock Companies, sales tax and income tax authorities, labour unions, customers, stock exchanges, trade associations and others are also interested in the affairs of the business. They have to make their own decision on the basis of the financial reports of the business.

1.9. Basic Accounting Terminology

Every subject has got its own terminology. Accounting, as a subject has got its own terms. These terms have their specific meaning in Accounting and used to express financial nature of the business.

1. Business Transactions

The economic event that relates to a business entity is called business transaction.

Every business activity is not an accounting activity. That is why, every activity is

Notes

not recorded in the books of accounting. We record only business transactions in Financial Accounting. The first step in the accounting process is the identification of business transaction. *Every activity of financial nature having documentary evidence, capable of being presented in numerical, monetary term causing effect on assets, liabilities, capital, revenue and expenses is termed as business transactions.*

Special features of business transactions are as under:

- (i) Business transactions must be financial in nature.
- (ii) Business transactions must be supported by documentary evidence.
- (iii) Business transactions must be presented in numerical monetary terms.
- (iv) Business transactions must cause an effect on assets, liabilities, capital, revenue and expenses.

Business transactions as such refer to business activities involving transfer of money or goods or services between two parties or two accounts. Purchase and sale of goods, receipts of income, etc. are business transactions. Business transactions may be both cash or credit.

2. Assets

The valuable things owned by the business are known as assets. These are the properties owned by the business. Assets are the economic resources of an enterprise which can be expressed in monetary terms. In the words of **Prof. R.N. Anthony**, "*Assets are valuable resources owned by a business which were acquired at a measurable money cost.*" The most important assets are:

(a) Fixed Assets

These assets are acquired for long-term use in the business. They are not meant for sale. These assets increase the profit earning capacity of the business. Expenditure on these assets is not regular in nature. Land and building, plant and machinery, vehicles and furniture, etc. are some of the examples of fixed assets.

(b) Current Assets

These assets, also known as circulating, fluctuating or floating assets. They change their values constantly. In the words of **Institute of Certified Public Accountants, USA**, "*Current assets include cash and other assets or resources, commonly identified as those which are reasonably expected to be realised in cash or sold or consumed during the normal operating circle of the business.*"

It should be noted that certain assets, which are popularly known as fixed may prove to be current by virtue of their specific use such as:

- (i) **Land** will be current assets in the hands of land developers and property dealers.
- (ii) **Building** with the builders and property dealers.
- (iii) **Plant and Machinery** with the manufacturers and dealers of plant and machinery.
- (iv) **Furniture** with the furniture dealers and furnishers.
- (v) **Shares and Debentures** with the dealers in securities.

It should be taken care of that assets meant for regular purchase and sale are always current assets.

(c) Fictitious Assets

Fictitious assets are those assets, which do not have physical form. They do not have any real value. Actually, they are not the real assets but they are called assets on legal and technical ground. These assets are the revenue expenditure of capital nature which are also termed as deferred revenue expenditure. The example of these assets are loss on issue of shares, advertising suspense and preliminary expenses, etc. Fictitious assets do not have real value, so they are written off in the future.

(d) Tangible Assets

Traditional View: Assets having physical existence which can be seen and touched are known as tangible assets. These assets are land, building, plant, equipment, furniture, stock, etc.

Alternative View: In a court testimony in USA, it was argued that tangible assets should not be allowed to mean assets having physical construction only because there are certain assets, such as cash, cash equivalent and receivables which do not have physical construction but even then treated as tangible assets. It finally emerged that all assets where revenue generation is certain should be treated as tangible assets. The examples of these assets are building, plant, equipment, furniture, stock, receivable cash, cash equivalents such as treasury bills, commercial papers and money market funds.

On the other hand, in the case of assets like goodwill, patent or copyright the revenue generation is assumed to be uncertain. That is why they are put in the category of intangible assets.

(e) Intangible Assets

These are the assets which are not normally purchased and sold in the open market such as goodwill and patents. It does not mean that these assets are never purchased and sold. They may be purchased and sold in special circumstances. Payment for patents can be made to reputed manufacturers of the country and abroad. Payments for patents is mostly made in case of medicines. While purchasing the business of other firms payment for goodwill is made. Goodwill may also be raised in case of admission or retirement of partner. It is also preferable to write off goodwill and patents accounts and not to show in the balance sheet.

(f) Wasting Assets

Assets, whose value goes on declining with the passage of time are known as wasting assets. Mines, patents and assets taken on lease are its examples.

(g) Liquid Assets

Liquidity refers to convertibility in cash. Liquid assets, therefore are those assets, which can be converted into cash at short notice. The examples of liquid assets are cash in hand, cash at bank, debtors, bills receivable, etc. In other words, liquid assets are current assets less stock, i.e.

$$\text{Liquid Assets} = \text{Current Assets} - (\text{Stock} + \text{Prepaid Expenses})$$

3. Capital

It is that part of wealth which is used for further production and thus capital consists

Notes

of all current assets and fixed assets. Cash in hand, cash at bank, building, plant and furniture, etc. are the capital of business. Capital need not necessarily be in cash. It may be in kind also. Capital may be classified as follows.

(a) Fixed capital

The amount invested in acquiring fixed assets is called fixed capital. The money is blocked in fixed assets and not available to meet the current liabilities. The amount spent on purchase or extension or addition to the fixed assets is fixed capital. Plant and machinery, vehicle, furniture and building, etc. are some of the examples of fixed capital.

(b) Floating capital

Assets purchased with the intention of sales, such as stock and investments are termed as floating capital.

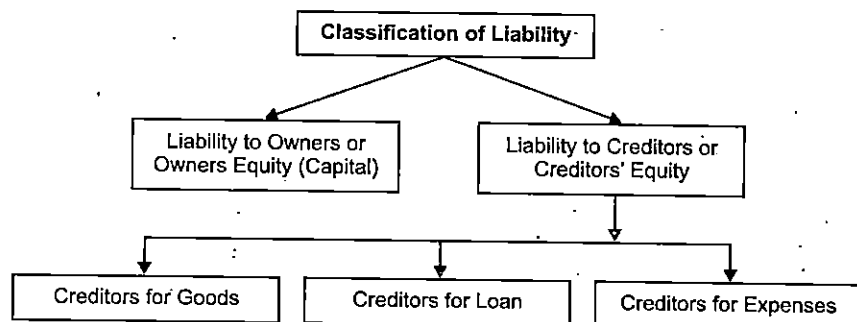
(c) Working capital

The part of capital available with the firm for day-to-day working of the business is known as working capital. Sufficient funds are required for purchasing goods and incurring direct and indirect expenses. Operational expenses are met with working capital. Current assets and current liabilities constitute working capital. Current assets consist of cash in hand, cash at bank, bills receivable, debtors, stock in hand, etc. and creditors, bills payable, short-term loan, income received in advance and outstanding expenses are the current liabilities. Working capital can also be expressed as under:

$$\text{Working Capital} = \text{Current Assets} - \text{Current Liabilities}$$

4. Equity or Liability

Liabilities are the obligations or debts payable by the enterprise in future in the form of money or goods. It is the proprietors' and creditors' claim against the assets of the business. Creditor may be classified as creditors for goods and creditors for expenses. The business should have sufficient current assets to meet its current liabilities and reasonable amount of fixed assets to meet its fixed liability. Liabilities can be classified as under:



Note: Accountants in USA use the term equity to denote liabilities and capital.

(a) Liability to Owners: It is the owner's claim against the assets of the business, generally known as capital. It is technically known as *internal equity* or *shareholder's funds*. It may also be expressed as under:

Owner's equity or Internal Equity = Capital + Profit Earned + Retained
(Shareholder's funds) Earning + Undistributed Profit
+ Interest on Capital – Drawings – Expenses.

Meaning and Scope of
Accounting

- (b) **Creditor's Equity:** It is creditors' claim against the assets of the business. These creditors may be creditors for goods and creditors for expenses:

Notes

- (i) *Creditors for goods:* Business has to purchase goods on credit, so the suppliers of goods to the business on credit are known as creditors for goods. They may be called as creditors and bills payable.
- (ii) *Creditors for loan:* These creditors are the parties, banks and other financial institutions. The liability is named as Bank loan, Bank overdraft, Loan from Industrial Finance Corporation, Industrial Development Bank of India and World Bank.
- (iii) *Creditors for expenses:* Certain expenses may concern the accounting period but may remain unpaid. These expenses may be outstanding salaries, rent due and wages unpaid. It is the current liability of the business.

Liabilities can also be classified and fixed, current and contingent liabilities.

- (a) *Fixed liability:* These liabilities are paid after a long period. Capital, loans, debentures, mortgage, etc. are its examples. These are not current liabilities.
- (b) *Current liabilities:* Liabilities payable within a year are termed as current liabilities. The value of these liabilities goes on changing. Creditors, bills payable and outstanding expenses, etc. are current liabilities.
- (c) *Contingent liabilities:* These are not the real liabilities. Future events can only decide whether it is really a liability or not. Due to their uncertainty, these liabilities are termed as contingent (doubtful) liabilities. Important examples of contingent liabilities are as under:
 - (i) Value of bills discounted.
 - (ii) Cases pending in the court of law.
 - (iii) Guarantees undertaken.

The value of contingent liabilities is not shown in the amount column at the liabilities side of balance sheet. It is clearly mentioned as a note inside/outside the balance sheet.

Liabilities are also classified as long-term liabilities and short-term liabilities:

- (a) *Long-term liabilities:* Liabilities payable after a period of one year such as term loans and debentures are long-term liabilities.
- (b) *Short-term liabilities:* Obligations payable within a period of one year, such as creditors, bills payable and overdraft, etc. are short-term liabilities.

5. Financial Statements/Final Accounts

Statements prepared by an enterprise at the end of accounting year to assess the status of income and assets is termed as Financial Statement/Final Accounts. It is categorised as Income Statement and Position Statement traditionally known as Profit and Loss Account and Balance Sheet.

Notes

6. Accounting Equation

Accounting rotate around three basic terms. These terms are Assets, Liabilities and Capital. The true inter-relationship between these terms is represented as Accounting Equations, i.e.,

$$\text{Assets} = \text{Liabilities} + \text{Capital}$$

7. Goods

Articles purchased for sale at profit or processing by the business or for use in the manufacture of certain other goods as raw material are known as goods. In other words, goods are the commodities, in which the business deals. Furniture will be goods for the firm dealing in furniture but it will be an asset for the firm dealing in stationery. *Americans use the term 'merchandise' for goods'.*

8. Cost

Expenditure incurred in acquiring, manufacturing and processing goods to make it sale worthy are termed as cost of goods. It includes purchases of tradeable goods, raw materials and direct expenses incurred in acquiring and manufacturing goods.

9. Purchases

In its routine business, the firm has to either purchase finished goods for sale or purchase of raw material for the manufacture of the article, being sold by the firm. The acquisition of these articles are purchases. The purchase of 10,000 metres of silk by Naro, a cloth merchant is termed as purchases in the business. In the same way, the purchases of ten fans by Kevi, a dealer in electrical appliances for use in the cooler being assembled in his factory will also be the purchases. It is immaterial whether goods have been purchased for cash or on credit. They may be purchased within the country or imported from abroad. *Purchases of assets, are not the purchases in accounting terminology as these assets are not meant for sale.*

Proper, complete and systematic record of the purchases is essential as the cost price of goods is based upon it. Purchases must be made at competitive rates.

10. Sales

The ultimate end of the goods purchased or manufactured by the business is their sales. It includes both cash and credit sales. In accounting terminology, sales means the sale of goods, never the sale of assets, sales should have a regular feature. The sales of ten sofa sets by Amenla, a furniture is sales but sale of old furniture by Akho, a stationery dealer will not be a sale. Sales may be effected within the country or exported abroad.

The maintenance of proper and complete record of sales is necessary, because the profit or loss is associated with the amount of sales. It should be the sincere effort of every business to purchase goods at competitive rates and make sales at reasonably higher rates to earn more profit.

11. Purchases Return or Return Outward

It is that part of the purchases of goods, which is returned to the seller. This return may be due to unnecessary, excessive and defective supply of goods. It may also result, if the supplier violates the terms and conditions of the order and agreement.

In order to calculate net purchases, purchases return is deducted from purchases. Purchases returns are also known as returns outward, because it is the return of goods outside the business.

12. Sales Return or Returns Inward

It is that part of sales of goods which is actually returned to us by purchasers. This return may also be due to excessive, unnecessary and defective supply of goods or violation of terms of agreement. Sales return, also known as returns inward is deducted from sales, in order to calculate net sales.

Notes

13. Stock

The goods available with the business for sale on a particular date is termed as stock. It varies, i.e., increases or decreases and goes on changing. In accounting, we use the term stock widely as opening and closing stock. In case of business which is being carried on for the last so many years, the value of goods on the opening day of the accounting year is known as opening stock. In the same way, the value of goods on the closing day of the accounting year will be closing stock. For example. Avi and Sons started their business on Jan. 1, 2006 and decided to close their books on 31st December every year. The firm will not have any opening stock on Jan. 1, 2006, because the business did not exist before Jan. 1, 2006. If the firm has goods worth ₹ 50,000 on 31st December, 2006, it will be the closing stock on the date. On January 1, 2007, the closing stock of December 31, 2006 will be the opening stock of the year 2007. It should always be kept in mind that stock is valued at cost price or market price, whichever is lower.

In case of manufacturing enterprises stock is classified as under:

- (i) **Stock of Raw Material:** Raw material required for manufacturing of the product in which the business deals is known as stock of raw material. Cotton in case of cotton mill is its example.
- (ii) **Work in Progress:** It is the stock of partly finished or partly manufactured goods just as price of thread and unfinished cloth in case of cotton mill.
- (iii) **Stock of Finished Goods:** Manufactured and finished goods ready for sale are known as stock of finished goods. Finished cloth is its example.

14. Expenses

Expenses are cost incurred by the business in the process of earning revenues. Generating income is the foremost objective of every business. The firm has to use certain goods and services to produce articles, sold by it. Payment for these goods and services are called expenses. Cost of raw material for the manufacture of goods or the cost of goods purchased for sale, expenses incurred in manufacturing or acquiring goods, such as wages, carriage, freight and amount spent for selling and distributing goods such as salaries, rent, advertising and insurance, etc. are known as expenses in accounting terminology. According to **Finney and Miller**, "*Expense is the cost of use of things or services for the purpose of generating revenue. Expenses are voluntarily incurred to generate income*".

15. Losses

Losses are unwanted burden which the business is forced to bear. Loss of goods due

Notes

to theft or fire, or flood or storm or accidents are termed as losses in accounting. Losses are different from expenses in the sense that expenses are voluntarily incurred to generate income where losses are forced to bear.

Losses may be classified as normal and abnormal. Normal loss is due to the inherent weakness in the commodities, *i.e.* coal, cement, oil, ghee, ice, petrol. There will be shortage in their weight due to leakage, meltage, evaporation, spoilage and wastage during the journey. Abnormal loss on the other hand, is an extra ordinary loss due to earthquake, fire, flood, storm, theft and accidents.

Losses adversely affect the profit of the business, so it should be the sincere effort of every firm to adopt preventive measures to minimise losses.

16. Profit

Excess of revenue over expense is termed as profit. In other words excess of sale proceeds over cost of goods sold is income. Here, sales means net sales, *i.e.* sales less sales return. Cost of goods sold, also known as cost of sales is opening stock plus net purchases plus direct expenses less closing stock. Income must be regular in nature. It must concern routine activities of the business. It is always the part of revenue receipt. It must relate to the business of the current year. It is shown at the credit side of profit and loss A/c. Profit is generated through business activities.

17. Income

Increase in the net worth of the enterprise either from business activities or other activities is termed as income. Income is a wider term, which includes profit also. From accounting point of view, *income is the positive change in the wealth of the enterprise over a period of time.*

18. Debtors

The term 'debtors' represents the persons or parties who have purchased goods on credit from us and have not paid for the goods sold to them. They still owe to the business. For example, if goods worth ₹ 20,000 have been sold to Adi, he will continue to remain the debtor of the business so far as he does not make the full payment. In case, he makes a payment of ₹ 16,000, he will remain to be debtor for $₹ 20,000 - ₹ 16,000 = ₹ 4,000$.

In case, the firm is a service institution and the payment for service still remains to be realised, beneficiaries of the service will also be known as 'debtors'.

19. Creditors

In addition, to cash purchases the firm has to make credit purchases also. The sellers of goods on credit to the firm are known as its creditors for goods. Creditors are the liability of the business. They will continue to remain the creditors of the firm so far the full payment is not made to them. Liability to creditors will reduce with the payment made to them.

Creditors may also be known as creditors for expenses. In case, certain expenses such as salaries, rent, repairs, etc. remain unpaid during the accounting period, it will be termed as outstanding expenses. Parties rendering these services will be our creditors. Creditors are current liability so the firm should have sufficient current assets to make their timely payment.

20. Receivables

Receivable means, what business has to receive from outside parties on revenue account. When we sell goods on credit, purchasers are known as debtors. Certain debtors accept bills drawn by us and become part of bills receivables. The total of Debtors and Bills Receivable is known as Receivables. These are current assets and realised within a year. Receivables are shown at the assets side of the Balance Sheet.

21. Payables

Payable means, what the business has to pay to outside parties. When we purchase goods on credit, sellers are known as creditors. We accept bills drawn by certain creditors, which becomes a part of Bills Payable. The total of Creditors and Bills Payable is termed as Payables. It is shown at the liabilities side of the Balance Sheet.

22. Proprietor

An individual or group of persons who undertake(s) the risk of the business are known as proprietor. They invest their funds into the business as capital. Proprietors are adventurous persons who make arrangement of land, labour, capital and organisation. They pay wages to labour, rent to land, interest to capital and salary to organisation. After meeting all the expenses of business. If there remains any surplus. It is known as profit. The proprietor is rewarded with profit for the risk undertaken by him if expenses exceed revenue the deficit is a loss to be borne by the proprietor.

In case of profit, proprietor's capital increases and in case of loss the capital decreases. Proprietor is an individual in case of sole trade, partners in case of partnership firms and shareholders in case of company.

23. Drawings

Amount or goods withdrawn by the proprietor for his private or personal use is termed as drawing. The cost of using business assets for private or domestic use is also drawing. Use of business car for domestic use or use of business premises for residential purpose is also drawing. Acquiring personal assets with business funds is also drawing. Certain examples of drawings are as under:

- (a) Amount withdrawn by proprietor for personal use.
- (b) Goods taken by the proprietor for domestic use.
- (c) Purchasing pocket transistor for proprietor's son.
- (d) Using business vehicles for domestic use.
- (e) Using business premises for residential purpose.

24. Accounting Year

Books of accounts are closed annually. From the balances of different ledger accounts we prepare income statement and position statement. Income statement shows gross and net income of the business. Position statement, traditionally known as Balance Sheet is a mirror, which reflects the true value of assets and liabilities on a particular date. There is no legal restriction about the accounting year of sole proprietorship and partnership firm. They may adopt the accounting year of their choice. It may be between January 1st to December 31st of the same year or July 1st of the year of June 30th of the next year or between two Diwalis or even financial year, i.e. April 1st to

March 31st of the next year. The only restriction is that the accounting period must consist of 12 months.

Companies must adopt financial year as their accounting year.

Notes

25. Entry

An entry is the systematic record of business transactions in the books of accounts. While passing entries, the principle 'every debit has got its corresponding credit' is adopted. Different accounts are debited and credited in the entry with the same amount.

26. Vouchers

Accounting transactions must be supported by documents. These documentary proofs in support of the transactions are termed as vouchers. It may be a receipt, cash memo, invoice, wages bill, salaries bill, deeds or any document as an evidence of transaction having taken place. The contents of vouchers are date, amount paid, purpose of the payment, payment passed by competent authority, payment made and cancelled. Vouchers are the basis of accounting records. They facilitate accounting. Vouchers are also used for verification and auditing of business records. Vouchers may also be used for detecting embezzlement and frauds.

27. Insolvent

All business firms who have been suffering losses for the last many years and are not even capable of meeting their liabilities out of their assets are financially unsound. Only the court can declare the business firm as insolvent if it is satisfied that the continuation of the firm will be against the interest of the public or creditors. No firm can declare itself as insolvent. In case of solvency, the assets of the business are sold and liabilities paid with the funds realised from the sale of assets. If the funds realised fall short of the liabilities creditors are paid proportionately.

28. Solvent

Solvent are those persons and firms who are capable of meeting their liabilities out of their own resources. Solvent firms have sufficient funds and assets to meet proprietors' and creditors' claim. Solvency shows the financial soundness of the business.

29. Gain

Change in the net worth (equity) due to change in the form and place of goods and holding of assets for a long period, whether realised or unrealised is termed as gain. It may either be of capital nature or revenue nature or both.

30. Expenditure

Expenditure is the amount of resources consumed. It is long term in nature. It is the benefit to be derived in future. It is the amount spent for the purchase of assets. Expenditures can be made through cash, or exchanged for other assets or commodities or a promise to make the payment is made. Expenditures increase the profit earning capacity of the business and profit is expected from them in future. Expenditures are incurred to acquire assets of the business.

1.10. Summary

- Book-keeping is the proper and systematic keeping or maintenance of the books of accounts.
- Accounting is an art of identifying, classifying, recording, summarising and interpreting business transactions of financial nature.
- The main purpose of accounting is to identify business transactions of financial nature and enter them into appropriate books of accounts.
- One of the main object of accounting is to calculate the profit or loss of the business.
- The assets side of the balance sheet shows the position of various assets such as cash in hand, cash at bank, sundry debtors, closing stock, building, machinery, furniture, etc. The liabilities side shows creditors' claim as creditors' for goods, bills payable, loans, outstanding expenses and proprietor's claim as capital, net profit and reserves.

Notes

1.11. Review Questions

1. Define accountancy.
2. What is the accounting year of the company?
3. Mention two advantages of accounting.
4. Name the document, which is used as a source document for recording business transactions.
5. State the meaning of Book-keeping.
6. Define Book-keeping.
7. Mention the objectives of Accounting in about 50 words.
8. Describe the steps in Book-keeping process.
9. What is accounting? Explain its objectives.
10. What is meant by Book-keeping? In what respects book-keeping is different from accounting?
11. Explain whether accounting is science or art or both.
12. Explain briefly the advantages and limitations of accountancy.

Accounting Principles

Notes

Structure

- 2.1. Introduction
- 2.2. Meaning of GAAP
- 2.3. Basic Accounting Concepts
- 2.4. Accounting Equation/Cycle
- 2.5. Computation-Classification of Transactions
- 2.6. Summary
- 2.7. Review Questions

2.1. Introduction

The business today is large in size and complex in nature. There are various groups who are interested in the performance of the business such as shareholders, debenture holders, investors, employees and consumers, etc. Accounting, in this way, is required to report and present the facts of the business in such a way, which can meet the varied requirements of different groups. It is, therefore, necessary that the language and terminology of accounting may be standardised so that there may be uniformity in the presentation of accounts. The idea requires scientific study, analysis and presentation of Accounts.

2.2. Meaning of GAAP

Generally, Accepted Accounting Principles (GAAP) are the set of rules and practices that are followed while recording transactions and preparing the financial statements, GAAP build sound theoretical foundation of Accounting.

According to **American Institute of Certified Public Accountants (AICPA)**, GAAP have substantial authoritative support and general acceptability. GAAP must be relevant (meaningful), objective (reliable) and feasible (implemented without much cost and complexity).

Accounting is the systematised body of knowledge having cause and effect relationship. The subject has certain established concepts, conventions, standard language and terminology to enable the interested parties in the subject to understand it in the same sense as the accountant wants to communicate. These rules are usually called *Generally Accepted Accounting Principles* (GAAP). Accounting assumptions, rule of recording and reporting business transactions are also known by terms like *concepts, principles, conventions, doctrines, tenets, axioms postulates, assumptions and modifying principles*.

The Principles of Accounting are not static in nature. These are constantly influenced by changes in legal, social and economic environment as well as the needs of the users. The various terms for principles are inter-changeably used by different authors. Generally, the term 'Basic Accounting Concepts' is used to refer all these terms.

Notes

2.3. Basic Accounting Concepts

The fundamental ideas or basic concepts underlying the theory and practice of financial accounting and broad working rules for all accounting activities, developed by professionals are listed and discussed below:

Basic Accounting Concepts

1. Business Entity Concept
2. Money Measurement Concept
3. Going Concern Concept
4. Accounting Period Concept
5. Dual Aspect (or Duality) Concept

These concepts are the foundation of systematic and proper accounting. Every business enterprise must adopt these concepts, popularly known as pillars upon which the sound structure of accounting stands. Let us discuss these basic concepts:

1. Business Entity Concept

In accounts, we distinguish between the business and its proprietors. Business is **assumed to have distinct entity, i.e. existence other than the existence of its proprietors and other business units**. As an accountant, we are concerned with the business not the businessman. We have to record business transactions from firm's point of view and never from the viewpoint of proprietors. We record transactions in the books of shop, establishment, factory, firm, company and enterprise and never in the books of proprietor, partners and shareholders. While making decisions regarding asset, liability, capital, revenue and expense, business viewpoint is taken into consideration.

The capital introduced by the proprietor in its own business is considered liability from business point of view. It will not be a liability if proprietor's viewpoint is taken. The logic behind treatment of capital as liability is that the firm has borrowed funds from its own proprietors instead of borrowing it from outside parties. It would have been a liability if the funds would have been borrowed from outside agency, then why not, if it is being invested by the proprietor himself. We also allow interest on capital to the proprietors because capital is supposed to be a liability. Interest on capital is an expense of the business, therefore, it will reduce the profit of the firm. It is at the same time proprietor's claim against the business, so it will increase his capital. Amount withdrawn by the proprietor for personal use, known as drawings is assumed to be the assets of the business and at the same time a liability to the proprietor.

The business as a distinct entity records all business transaction into the books of accounts and reports the result to the proprietor in case of sole trade, partners

Notes

in case of partnership firms and shareholders in case of company. There is a legal divorce between the ownership and management of a company. The company is owned by shareholders but managed by the elected representatives of the shareholders, i.e. directors. Accounts are prepared by the management and a copy of the financial statements is supplied to the shareholders, the owners of the company for information. Every accountant whether he is concerned with a petty shop or a firm or a company or a big business house will have to compulsorily adopt the concept of business entity in his accounting operations.

Legally, a sole proprietor or the partner of a partnership firm are not separate from their business units but in Accounting the business units are assumed to have distinct entity. Accounting entity is different from business entity. Accounting entity is wider term including business, clubs, institutions, public enterprises, local bodies and government, etc.

2. Money Measurement Concept

In accounting, we identify and record only those business transactions which are financial in nature. Accounting transactions must have their monetary value. The worth of the transaction must be measured in terms of money. In all the accounting records, we have amount column showing rupees and paise. There is never any accounting record in metres, litres, kilograms and quintals. We evaluate the value of the commodities in terms of money and accordingly record them in the books of accounts. Recording transactions in monetary terms makes the information more meaningful. For example, statement that the business was started with ₹ 50,000 cash and 20,000 metres of silk is meaningless and fails to tell us the capital of the business. If the value of 20,000 metres of silk is estimated to be ₹ 5,00,000, we can safely say that the business was started with ₹ 50,000 + 5,00,000 = ₹ 5,50,000, which will be meaningful.

The concept of money measurement is not free from problems when we integrate the financial statements of an entity having operations in more than one nation.

3. Going Concern Concept

While recording business transactions in the books of accounts, we assume that the **business will be carried on indefinitely**. That is why, the business purchases fixed assets like land and building, plant and machinery, vehicles, furniture, etc. If the concept of going concern is not there, we would have hired these assets and not purchased. These assets have been acquired for use and not for sale, so we maintain individual assets account and charge necessary depreciation on it.

According to **International Accounting Standard** "The enterprise is normally viewed as a going concern, that is as continuing in operation for the foreseeable future". It is viewed that the enterprise has an intention to be carried on for longer period. The concept of assets, liabilities, capital, revenue and expenses used in the accounting operation prove that the firm has to last long. Planning, organising and personnel policies substantiate the fact that the business has been assumed to be going entity. It is binding upon every accountant to treat business activity as a continuing process and record transaction accordingly.

4. Accounting Period Concept

Strictly speaking, the result of the business can be estimated at the end of its life. If a firm was started with a capital of ₹ 50,000 and at the end of its life the capital was ₹ 5,00,000 we can say that the firm earned a profit of ₹ 4,50,000, i.e. 5,00,000 – 50,000 during its life. In this way, business as a going entity will continue indefinitely and we will have to wait for a very long period to estimate the financial result of the business. It will be too late to wait for the results, so the life span of accounting should be split into shorter and convenient period. At present, accounting periods are regarded as twelve months. According to the Companies Act and Banking Regulation Act, accounting period should consist of twelve months. The period of twelve months is regarded as ideal and convenient period for accounting.

Notes

5. Dual Aspect (or Duality) Concept

Every business transaction has double effect. There are two sides of every transaction. This is evident when we study the accounting term, i.e. assets, capital and liabilities.

1. **Assets:** These are the valuable articles owned by the business. Expenditure incurred in acquiring valuable things for the firm is assets. Special features of assets are that they are meant for use in the business and will increase the profit earning capacity of the business. Cash in hand, cash at bank, land and buildings, furniture, vehicles, etc. are the assets of the firm. It has been an established fact that no business can be carried on without assets. Business as a separate entity and going concern must possess certain assets.
2. **Capital:** Capital is that part of wealth which is used for further production. In the context of dual aspect concept capital supplies necessary funds to the business to purchase certain assets. In the absence of capital, there will be no funds with the enterprise and thus, the question of acquiring assets does not arise. If we take it from business point of view, proprietor's capital is the liability of the business. Capital received in cash represents two accounts, capital and cash. Capital is the proprietor's claim against the assets of the business and the cash is the asset of the business itself. As the amount of the two accounts are the same, we can safely conclude that:

$$\text{Capital} = \text{Assets}$$

3. **Liabilities:** If the capital invested by the proprietor falls short the business has to borrow funds. Thus the loan on the one side is the liability of the firm and on the other side it will be in the form of cash or other assets. The amount represented by both loan and assets are equal. This transaction enables us to think about the two aspects so it is called dual aspect concept or double entry system. All the assets of the business are acquired by the funds contributed by proprietors and creditors, so it is always correct to conclude as under:

$$\text{Capital} + \text{Liabilities} = \text{Assets.}$$

The relationship between assets, liabilities and capital is at present known as *Accounting Equation* which can also be expressed as under:

Notes

$$\text{Assets} = \text{Capital} + \text{Liabilities}$$

or

$$\text{Capital} = \text{Assets} - \text{Liabilities}$$

or

$$\text{Liabilities} = \text{Assets} - \text{Capital}$$

We record all the business transactions on the basis of dual aspect and call the system as *double entry system*.

2.4. Accounting Equation/Cycle

Meaning

There has been a revolution in every field of knowledge. Scientific approach towards every subject has emerged as a basic consideration to decide its utility. Scientific studies were also made in accounting and result was discovery of 'Accounting Equation'. The study revealed that accounting rotates round the three terms, *i.e.* assets, liabilities and capital. The entire accounting structure is based upon these three terms. These terms are inter-related and inter-woven. Before explaining accounting equation let us discuss these terms:

Analysis of Transactions

Assets, liabilities and capital are constituents of business transactions. Let us discuss these elements:

1. **Assets:** The acceptable meaning of assets is the valuable things owned by the firm. Expenditure for acquiring these valuable articles for use in the business is also termed as assets. The assets are acquired for constant future use. They are not meant for sale. These assets increase the profit earning capacity of the business. Some of the assets are listed as under:

(i) Cash in hand	(viii) Plant and machinery
(ii) Cash at bank	(ix) Equipments and tools
(iii) Sundry debtors or Book debts	(x) Furniture and fittings
(iv) Bills receivables	(xi) Patents, trade marks, etc.
(v) Investments	(xii) Goodwill
(vi) Closing stock	(xiii) Prepaid expenses
(vii) Land and building	(xiv) Accrued income
2. **Liabilities:** Creditors' and proprietors' claim against the assets of business is termed as its liability. Proprietor's claim is termed as capital, which we shall be discussing later on. Liabilities are also known as equities or claims. The term liability means the claim of outsiders against the business such as creditors for goods and expenses. Liability is the account for which the firm is indebted to outside parties. Certain external liabilities are mentioned as under:
 - (i) Creditors for goods—sundry creditors and bills payable
 - (ii) Creditors for expenses:

- (a) Outstanding salaries
- (b) Unpaid wages
- (c) Rent due but not paid
- (iii) Other liabilities:
 - (a) Bank loan or overdraft
 - (b) Partner's loan
 - (c) Loan from Financial Institution, *i.e.*, IFC, IDBI, etc.
 - (d) Debentures
 - (e) Employees Provident Fund
 - (f) Workmen's Compensation Fund, etc.

Notes

Liabilities also go on changing. Their value either increases or decreases. In case of increase the business will have to pay more and in case of decrease the business will have to pay lesser.

7. **Capital:** It is the proprietor's claim against the assets of the business. In case of one man business the capital is contributed by the proprietor himself. In case of partnership, capital is contributed by partners and in case of companies, shareholders contribute for capital. Owners of the business are the contributor of the capital. Owners are the entrepreneurs of the business. They get profit of the business for the risk taken by them. If certain amount of profit remains undistributed or retained as reserve and funds, it is also known as proprietor's claim. Proprietor's claim can be enumerated as under:

- (i) Capital
- (ii) Reserve, general reserve or reserve fund
- (iii) Profit or retained earning
- (iv) Interest on capital

Explanation of Accounting Equation: Business transaction are financial in nature and so every transaction affects the financial position of the business. These transactions increase or decrease the assets, liabilities or capital. Every business has certain assets. These assets are purchased with the funds supplied to the business by its proprietors or creditors. Proprietors' and creditors' funds, in whatever form they are, create assets. For example, if the business receives ₹ 1,00,000 as capital from the proprietor and retains that in the firm, it will create an asset, *i.e.*, cash in hand. If ₹ 80,000 are deposited into the bank, the total capital will be represented by two assets, *i.e.* cash ₹ 20,000 (due to deposit into the bank of ₹ 80,000 out of a cash balance of ₹ 1,00,000) and cash at bank ₹ 80,000. If furniture, worth ₹ 20,000 are purchased and payment is made out of bank deposit, the assets will now consist of cash in hand ₹ 20,000, cash at bank ₹ 60,000 (due to purchase of furniture, bank balance has reduced by ₹ 20,000) and furniture ₹ 20,000. **As such accounting equation is a statement of equality between debits and credits.** These above facts can also be presented in this way:

Notes

Capital	Assets
(i) ₹ 1,00,000 = Cash (₹ 1,00,000)	
(ii) ₹ 1,00,000 = Cash (₹ 20,000) + Bank balance (₹ 80,000)	
(iii) ₹ 1,00,000 = Cash (20,000) + Bank (60,000) + Furniture (20,000)	

The above facts are technically known as Accounting Equations in simple form and reveal that capital which is always equal to assets.

Increase in capital will, generally, result in the corresponding increase in the assets and in the same way, decrease in capital will result in the decrease of assets. If the proprietor introduces ₹ 40,000 as additional capital there will be corresponding increase in cash balance. As both capital and assets are increasing simultaneously with ₹ 40,000 the capital will remain equal to assets, Amount with drawn by the proprietor for personal use will decrease capital and there will be decrease in the cash, an asset at the same time. If drawings are worth ₹ 10,000 both the capital and assets will decrease simultaneously with ₹ 10,000.

Introduction of Creditors' Liability in Accounting Equations

It has been accepted fact that business does not possess anything of its own. The business receives funds from proprietors and creditors and retains all of them in the form of various assets. This shows that capital + liabilities are always equal to assets. The fact can be presented in terms of accounting equation as under:

Equation.	Capital + Liabilities = Assets	or	C + L = A
or	Assets = Liabilities + Capital	or	A = L + C
or	Liabilities = Assets - Capital	or	L = A - C
or	Capital = Assets - Liabilities	or	C = A - L
or	Assets - Liabilities - Capital = Zero	or	A - L - C = Zero

2.5. Computation-Classification of Transactions

Assets, liabilities and capital are the three basic elements of every business transaction. The relationship between these terms, as mentioned above in the form of Accounting Equation remains unchanged. It has been a mathematical truth. No business transaction can upset the relationship between these items. The inter-relationship of assets, liabilities and capital results into nine transactions. These transactions show that change in one element results in corresponding changes in the same item or in other element. These nine basic transactions are as under:

- (i) Increase in assets with corresponding increase in capital.
- (ii) Increase in assets with corresponding increase in liabilities.
- (iii) Increase and decrease in assets.
- (iv) Decrease in assets with corresponding decrease in liabilities.
- (v) Decrease in assets with corresponding decrease in capital.
- (vi) Increase and decrease in liabilities.
- (vii) Increase and decrease in capital.

(viii) Increase in liabilities and decrease in capital.

(ix) Increase in capital and decrease in liabilities.

- (i) *Increase in assets with corresponding increase in capital:* Commencement of business with ₹ 20,000 increases both the assets and capital of the firm. At the same time, it will affect the financial position of the business as under:

Notes**Financial Position (Balance Sheet)**

Liabilities	Amount (₹)	Assets	Amount (₹)
Capital	20,000	Cash	20,000
Creditors	—		
	20,000		20,000

- (ii) *Increase in assets with corresponding increase in liabilities.* Purchase of goods on credit for ₹ 7,000 will increase stock of goods with ₹ 7,000 and also increase creditors' liabilities. The transaction will affect the financial position as under :

Financial Position (Balance Sheet)

Liabilities	Amount (₹)	Assets	Amount (₹)
Capital	20,000	Cash	20,000
Creditors	7,000	Stock in trade	7,000
	27,000		27,000

The position can be presented alternatively as under :

$$\text{Assets} = \text{Liabilities} + \text{Capital}$$

$$27,000 = 7,000 + 20,000$$

- (iii) *Increase and decrease in assets:* Purchase of furniture worth ₹ 3,000 involves furniture and cash, the two assets. The transaction will increase furniture as an asset and decrease cash, also an asset. Increase and decrease in the assets with the same amount will not upset the equation. The transaction can be expressed as follows :

<i>Assets</i>				=	<i>Liabilities</i>	+	<i>Capital</i>	
Cash	+	Stock	+	Furniture	=	Creditors	+	Capital
17,000	+	7,000	+	3,000	=	7,000	+	20,000

- (iv) *Decrease in assets with corresponding decrease in liabilities:* Payment of ₹ 2,000 to creditors will decrease creditors, the liabilities of the business and at the same time cash an asset will decrease. The decrease in assets and liabilities simultaneously with the same amount will hold the accounting Equation true. The transaction will effect the Accounting Equation as follows:

Notes

<i>Assets</i>				=	<i>Liabilities</i>	+	<i>Capital</i>	
Cash	+	Stock	+	Furniture	=	Creditors	+	Capital
17,000	+	7,000	+	3,000	=	7,000	+	20,000
-2,000	+	0	+	0	=	(-) 2,000	+	0
15,000	+	7,000	+	3,000	=	5,000	+	20,000

- (v) *Decrease in assets with corresponding decrease in capital:* ₹ 4,000 withdrawn by the proprietor for personal use will reduce capital and also cash, an asset simultaneously with 4,000. The transaction still proves the validity of accounting Equation as under :

<i>Assets</i>				=	<i>Liabilities</i>	+	<i>Capital</i>	
Cash	+	Stock	+	Furniture	=	Creditors	+	Capital
15,000	+	7,000	+	3,000	=	5,000	+	20,000
-4,000	+	0	+	0	=	0	(-)	4,000
11,000	+	7,000	+	3,000	=	5,000	+	16,000

The financial position of the business up to 5th transaction will be as under:

Financial Position (Balance Sheet)

Liabilities	Amount (₹)	Assets	Amount (₹)
Capital	16,000	Furniture	3,000
Creditors	5,000	Stock	7,000
		Cash	11,000
	21,000		21,000

- (vi) *Increase and decrease in liabilities:* Creditors for goods sometimes draw a bill of exchange on us as per the arrangement of the payment. After acceptance of the bill, the payment becomes due for payment after the expiry of certain specified period. Acceptance of the bill reduces creditor's liability and creates another liability, known as bills payable, the bill whose payment has to be made. If we accept a bill for ₹ 1,500 creditors will be reduced to ₹ 5,000 - 1,500 = 3,500 and fresh liability known as Bills Payable will come into our records. The transaction will affect the financial position of the business as under:

Financial Position (Balance Sheet)

Liabilities	Amount (₹)	Assets	Amount (₹)
Capital	16,000	Cash	11,000
Creditors	3,500	Stock in trade	7,000
Bills payable	1,500	Furniture	3,000
	21,000		21,000

The above position can alternatively be presented as under:

Assets			=	Liabilities		+ Capital
Cash	+	Stock	+	Furniture	=	Creditors + Bills payable + Capital
11,000	+	7,000	+	3,000	=	3,500 + 1,500 + 16,000

Notes

(vii) *Increase and decrease in capital:* Certain transactions involve capital only, Such as transfer of share of the Company from one shareholder to another shareholder. In this case, the capital of the company will increase and decrease with the same amount and this will remain unchanged. There will be change in the name of shareholder which will be recorded in the transfer register of the company. Interest on capital is another item affecting capital only. Proprietors capital will increase with the amount of interest allowed to him. Interest on capital is the expense of the business, so it will have to be borne by the proprietor and thus charged out of capital account. The net result will be an increase and decrease in capital simultaneously with the same figure and accounting equation will still prove to be true. Financial position of the business will remain unchanged.

(viii) *Increase in liabilities and decrease in capital:* In certain cases, capital may be converted into loan, as a liability. Such transactions may happen, when a partner retires from the firm and the capital refundable to him is transferred to his loan account. In this case, the firm will be showing partner's loan as a liability instead of partner's capital. In case of death of a partner amount payable to the legal inheritor of the deceased partner is transferred to partner's executor's loan account. This transaction will also decrease capital and increase liability. If ₹ 5,00 are transferred from capital account to loan account the financial position will be as under:

Financial Position (Balance Sheet)

Liabilities	Amount (₹)	Assets	Amount (₹)
Capital	11,000	Cash	11,000
Creditors	3,500	Stock in trade	7,000
Bills payable	1,500	Furniture	3,000
Loan	5,000		
	21,000		21,000

The above position can also be presented as under:

Assets			=	Liabilities		+ Capital
Cash	+	Stock	+	Furniture	=	Creditors + Bills payable + Loan + Capital
11,000	+	7,000	+	3,000	=	3,500 + 1,500 + 5,000 + 11,000

(ix) *Increase in capital and decrease in liabilities:* Conversion of loan into

Notes

capital reduces the liability of the business on one hand and increases capital on the other hand. Conversion of debentures into share capital is an example of such transaction. Creditors may also be converted into share capital. If creditors for ₹1,000 are allotted shares against their loan, the financial position will be affected as under:

Financial Position (Balance Sheet)

Liabilities	Amount (₹)	Assets	Amount (₹)
Capital	12,000	Cash	11,000
Creditors	2,500	Stock in trade	7,000
Bills payable	1,500	Furniture	3,000
Loan	5,000		
	21,000		21,000

The financial position shows that capital has increased by ₹ 1,000 and is now ₹ 11,000 + 1,000 = 12,000 and at the same time creditors have been reduced to ₹ 3,500 - 1,000 = 2,500.

The fact can alternatively be presented as under:

Assets				=	Liabilities			+ Capital	
Cash	+	Stock	+	Furniture	=	Creditors	+ Bills payable	+ Loan	+ Capital
11,000	+	7,000	+	3,000	=	2,500	+ 1,500	+ 5,000	+ 12,000

The basic nine transactions discussed above are summarised through the following illustrations.

Illustration 1: Develop accounting equation from the following transactions:

	₹
(i) Adi commenced business with cash	50,000
(ii) Purchased goods for cash	30,000
(iii) Purchased goods on credit	20,000
(iv) Sold goods (cost ₹ 10,000) for	12,000
(v) Bought furniture on credit	2,000
(vi) Paid cash to a creditor	15,000

Solution:

Accounting Equation

Transactions	Assets			=	Liabilities + Capital	
	Cash +	Stock +	Furniture	=	Creditors +	Capital
(i) Adi commenced business. with cash ₹ 50,000	50,000 +	0 +	0	=	0 +	50,000

(ii) Purchased goods for cash					
₹ 30,000	(-)30,000 +	30,000 +	0 =	0 +	0
New Equation	20,000 +	30,000 +	0 =	0 +	50,000
(iii) Purchased goods on credit					
₹ 20,000	+ 20,000 +		0 =	20,000 +	0
New Equation	20,000 +	50,000 +	0 =	20,000 +	50,000
(iv) Sold goods (cost					
₹ 10,000) for ₹ 12,000	+ 12,000 +	(-)10,000 +	0 =	0 +	2,000
New Equation	32,000 +	40,000 +	0 =	20,000 +	52,000
(v) Bought furniture on credit					
₹ 2,000	0 +	0 +	2,000 =	2,000 +	0
New Equation	32,000 +	40,000 +	2,000 =	22,000 +	52,000
(vi) Paid cash to a creditor					
₹ 15,000	(-)15,000 +	0 +	0 =	(-)15,000 +	0
New Equation	17,000 +	40,000 +	2,000 =	7,000 +	52,000

Notes

Treatment of Revenue Payments and Receipts

(a) Revenue Payments

- (i) **Treatment of Expenses Paid:** The business had to pay certain expenses in its day-to-day operations, such as payment of salaries, rent, insurance premium, office expenses, wages, repairs, etc. These expenses are paid regularly. These business expenses are paid in cash, so cash will reduce and thus, payment of expenses are reduced from cash balance. These expenses will also reduce net income of the business. As the income is the reward paid to proprietor for the risk undertaken by him so expenses will reduce proprietor's reward. Proprietor is represented by Capital Account so the payment of expenses will decrease capital.
- (ii) **Treatment of Outstanding Expenses:** If expenses relate to accounting period and remain unpaid, they are termed as outstanding expenses. Outstanding salaries, rent unpaid, wages due, repairs due but not paid are its certain examples. As these expenses relate to the accounting period, so they will reduce capital of the proprietor. Both the case of expenses paid and expenses due are treated at par as regards decrease in the capital of the proprietor. They are different in the sense that expenses paid reduce cash balance but expenses outstanding do not reduce cash balance. As these expenses are still payable, it is a liability of the business and thus increase liability.
- (iii) **Treatment of Prepaid or Unexpired Expenses:** There may be certain cases where expense may have been paid in advance. In certain cases, expenses relating to the next accounting period may be paid during the current year. These expenses are prepaid or unexpired, i.e. insurance and rent paid in advance for the next following year. Prepaid expenses increase and decrease assets simultaneously. The payment has been made in cash,

so-cash will be reduced. As the expenses have been paid during the current year for the next year, it will be an asset for the current year because the amount has to be realised by the current year from the following year:

Illustration 2: Show the effect of following transactions on accounting equation and also prepare a Balance Sheet:

Notes

	₹
(i) Started business with cash amounting to ₹ 35,000 and goods.....	15,000
(ii) Salaries paid.....	2,000
(iii) Wages outstanding	200
(iv) Prepaid insurance	700
(v) Interest due but not paid	100
(vi) Rent paid in advance	150

Solution:

Accounting Equation

Transactions	Assets		=	Liabilities +		Capital
	Cash +	Stock +	Prepaid =	Outstanding +	Capital	
			expenses	expenses		
(i) Started business with cash ₹ 35,000 Goods ₹ 15,000	35,000 +	15,000 +	0 =	0 +	50,000	
(ii) Salaries paid ₹ 2,000	(-) 2,000 +	0 +	0 =	0 (-)	2,000	
New Equation	33,000 +	15,000 +	0 =	0 +	48,000	
(iii) Wages outstanding ₹ 200	0 +	0 +	0 =	200 (-)	200	
New Equation	33,000 +	15,000 +	0 =	200 +	47,800	
(iv) Prepaid Insurance ₹ 700	(-) 700 +	0 +	700 =	0 +		
New Equation	32,300 +	15,000 +	700 =	200 +	47,800	
(v) Interest due but not paid ₹ 100	0 +	0 +	0 =	100 (-)	100	
New Equation	32,300 +	15,000 +	700 =	300 +	47,700	
(vi) Rent paid in advance ₹ 150	(-) 150 +	0 +	150 =	0 +	0	
New Equation	32,150 +	15,000	850 =	300 +	47,700	

The accounting facts presented by the above accounting equation can also be verified by the following Balance Sheet:

Balance Sheet

Liabilities	Amount (₹)	Assets	Amount (₹)
Outstanding wages	200	Cash	32,150
Outstanding interest	100	Stock in trade	15,000
Capital	47,700	Prepaid insurance	700
		Rent paid in advance	150
	48,000		48,000

(b) Revenue Receipts**Notes**

- (i) **Income Received:** The business receives certain income during its day-to-day operations. The income is received regularly. Rent received, commission earned and discount received, etc. are its examples. As the income is received in cash it increases cash balance on the one hand and also increases proprietor's capital. Proprietor's claim against the assets of business increases with every income, so the income earned is added to capital.
- (ii) **Income Due but not received or Accrued Income:** The income has been earned during the year, so proprietors capital will increase but as income is accrued or still to be received it will be treated as assets. The income relates to the current year, so it will increase current year's income. The income has become due from other parties so the concerned party will be the debtor of the firm. Debtor's being assets, accrued income will also be an asset.
- (iii) **Unearned Income or Income received in Advance:** It is just possible that we may have received certain income in advance. The income has been received during the current year, although it relates to the next year. As the income has been received in cash, it will increase cash balance. The income actually belongs to the next year but has been received by the current year, as such it will be a liability of the current year towards next year.

Illustration 3: Show the effect of the following transactions on assets, liabilities and capital using accounting equation. Also prepare Balance Sheet.

	₹
(i) Started business with cash	60,000
(ii) Rent received.....	2,000
(iii) Accrued interest	500
(iv) Commission received in advance	1,000

Solution:

Accounting Equation

Transactions	Assets		=	Liabilities +		Capital
	Cash +	Accrued Interest	=	Commission received in Advance	+	Capital
(i) Started business with cash ₹ 60,000	60,000 +	0 =		0 +		60,000
(ii) Rent received ₹ 2,000 New Equation	+ 2,000 +	0 =		0 +		2,000
(iii) Accrued interest ₹ 500 New Equation	0 +	500 =		0 +		500
(iv) Commission received in advance ₹ 1,000 New Equation	62,000 + 1,000 +	500 = 0 =		0 + 1,000 +		62,500 0
	63,000 +	500 =		1,000 +		62,500

Accounting facts presented by the above accounting equation is also presented in the form of Balance Sheet.

Balance Sheet

Notes

Liabilities	Amount (₹)	Assets	Amount (₹)
Commission received in advance	1,000	Cash	63,000
Capital	62,500	Accrued interest	500
	63,500		63,500

Treatment of Purchases and Sales

(a) Purchases

- (i) **Cash Purchases:** Purchases of goods for cash affects assets only. It increases stock of goods with the business and at the same time decreases cash, because the payment for goods has been made in cash.
- (ii) **Credit Purchases:** The transaction increases stock of goods, an asset but also creates a liability. Payments to creditors have not been made so far, as such liability to creditors is still there. Credit purchases, therefore, increases both assets and liabilities at the same time.

Payment to creditors in cash will reduce cash, an asset and also creditors, a liability. If creditors draw a bill of exchange, the firm will accept the bill and thus a liability, as Bills Payable will be created in place of creditors. In this way, the transaction will decrease creditors and also create a liability as Bills Payable. In certain cases, if the payment to creditors is made immediately and creditors allow us discount, the transaction will reduce cash with actual amount paid increase capital with the amount of discount received and decrease creditors with the amount of actual payment plus discount. For example, if we purchase goods worth ₹ 1,000 from Anshu on credit and make a payment of ₹ 990 in full settlement. The payment will reduce creditors by ₹ 1,000, cash by ₹ 990 and also increase capital by ₹ 10.

(b) Sales

- (i) **Cash Sales:** It is the sincere effort of every business to sell goods at a price more than its cost price. Excess of sales price over the cost price is profit and will increase capital. For example, if goods costing ₹ 1,740 are sold for ₹ 2,000, it will increase cash by ₹ 2,000, reduce stock of goods by ₹ 1,740 and the resultant profit i.e., $₹ 2,000 - 1,740 = 260$ will be added to capital.
- (ii) **Credit Sales:** In case goods costing ₹ 2,700 are sold for ₹ 3,000 on credit, it will increase debtors, the assets of the firm by ₹ 3,000 reduce stock of goods by ₹ 2,700 and also increase capital with $₹ 3,000 - 2,700 = ₹ 300$. In this case, if full payment is received from debtors, it will increase cash and decrease debtors. Cash and debtors are both assets, so the effect of the transaction will be restricted to assets only. In the above case, if we receive ₹ 2,900 from debtors and allow them ₹ 100 as discount, the transaction

will increase cash by ₹ 2,90, reduce capital with the amount of discount allowed, i.e. ₹ 100 and at the same time decrease debtors, by ₹ 3,000.

Treatment of Miscellaneous Transactions

- (a) **Amount Withdrawn by the Proprietor:** If the proprietor withdraws ₹ 2,000 for personal use, the transaction will reduce cash by ₹ 2,000 and at the same time reduce proprietor's capital. In case the proprietor takes certain goods for domestic use, it will decrease his capital and the stock of goods.
- (b) **Depreciation on Assets:** Depreciation is the wear and tear or loss in the value of assets due to its use, so it will reduce assets and capital at the same time. For example, if there is a depreciation of ₹ 2,000 on plant, the transaction will reduce plant by ₹ 2,000. As depreciation is a loss it will also reduce capital.
- (c) **Interest on Capital:** Capital is the liability of the business. Interest on a liability is an expense and thus, capital will be reduced. Interest on capital is credited to capital account, so capital will be increased. The transaction will increase and also decrease the capital.
- (d) **Interest on Drawings:** Drawings is the amount withdrawn by the proprietor from the business. In other words, it is the amount advanced by the firm to the proprietor and thus, interest on drawings will be received by the firm and capital will be increased. Interest on drawings will be charged on proprietor's capital, so the capital will be reduced. This transaction will also result in the increase and decrease of capital.

Notes

Illustration 4: Show the accounting equation on the basis of the following transactions :

	₹.
(i) Ankita started business with cash	50,000
(ii) Purchased goods on credit	4,000
(iii) Purchased goods for Cash	1,000
(iv) Purchased furniture	500
(v) Paid rent	200
(vi) Withdrew for private use	700
(vii) Received interest	100
(viii) Sold goods on credit (cost ₹ 500) for	700
(ix) Paid to creditors	400
(x) Paid salaries	200

Solution:**Accounting Equation****Notes**

Transactions	Assets				= Liabilities + Capital	
	Cash +	Stock +	Debtors +	Furniture +	Creditors +	Capital
	of goods					
(i) Ankita started business with ₹ 50,000	50,000 +	0 +	0 +	0 =	0 +	50,000
(ii) Purchased goods on credit ₹ 4,000	0 +	4,000 +	0 +	0 =	4,000 +	0
New Equation	50,000 +	4,000 +	0 +	0 =	4,000 +	50,000
(iii) Purchased goods for cash ₹ 1,000	(-) 1,000 +	1,000 +	0 +	0 =	0 +	0
New Equation	49,000 +	5,000 +	0 +	0 =	4,000 +	50,000
(iv) Purchased Furniture ₹ 500	(-) 500 +	0 +	0 +	500 =	0 +	0
New Equation	48,500 +	5,000 +	0 +	500 =	4,000 +	50,000
(v) Paid rent ₹ 200	(-) 200 +	0 +	0 +	0 =	0 (-)	200
New Equation	48,300 +	5,000 +	0 +	500 =	4,000 +	49,800
(vi) Withdrew for private use ₹ 700	(-) 700 +	0 +	0 +	0 =	0 (-)	700
New Equation	47,600 +	5,000 +	0 +	500 =	4,000 +	49,100
(vii) Received interest ₹ 100	+ 100 +	0 +	0 +	0 =	0 +	100
New Equation	47,700 +	5,000 +	0 +	500 =	4,000 +	49,200
(viii) Sold goods on credit costing ₹ 500 for ₹ 700	0 +	(-) 500 +	700 +	0 =	0 +	200
New Equation	47,700 +	4,500 +	700 +	500 =	4,000 +	49,400
(ix) Paid to creditors ₹ 400	(-) 400 +	0 +	0 +	0 =	(-) 400 +	0
New Equation	47,300 +	4,500 +	700 +	500 =	3,600 +	49,400
(x) Paid salaries ₹ 200	(-) 200 +	0 +	0 +	0 =	0 (-)	200
New Equation	47,100 +	4,500 +	700 +	500 =	3,600 +	49,200

The above fact can be presented by a Balance Sheet as under:

Balance Sheet

Liabilities		Assets	Amount (₹)
Creditors	3,600	Cash	47,100
Capital	49,200	Debtors	700
		Stock of goods	4,500
		Furniture	500
	52,800		52,800

Illustration 5: Show the effect of the following business transactions on assets, liabilities and capital through accounting equation:

Accounting Principles

	₹
(i) Commenced business with cash	20,000
(ii) Goods purchased on credit	7,000
(iii) Furniture purchased	3,000
(iv) Paid to creditors	2,000
(v) Amount withdrawn by the proprietor	4,000
(vi) Creditors accepted a bill for	1,500
(vii) Interest on capital	1,000
(viii) Transfer from capital to loan	5,000
(ix) Allotted shares to creditors	1,000

Notes

Solution: The inter-relationship of nine transactions may be summarised as under:

Transactions	Assets			= Liabilities +			Capital
	Cash +	Stock +	Furniture =	Creditors +	B/P +	Loan +	Capital
(i) Commenced business with cash ₹ 20,000	20,000 +	0 +	0 =	0 +	0 +	0 +	20,000
(ii) Goods purchased on credit ₹ 7,000	0 +	7,000 +	0 =	7,000 +	0 +	0 +	0
New Equation	20,000 +	7,000 +	0 =	7,000 +	0 +	0 +	20,000
(iii) Furniture purchased ₹ 3,000	(-)3,000 +	0 +	3,000 =	0 +	0 +	0 +	0
New Equation	17,000 +	7,000 +	3,000 =	7,000 +	0 +	0 +	20,000
(iv) Paid to creditors ₹ 2,000	(-)2,000 +	0 +	0 =	(-)2,000 +	0 +	0 +	0
New Equation	15,000 +	7,000 +	3,000 =	5,000 +	0 +	0 +	20,000
(v) Amount withdrawn by the proprietor ₹ 4,000	(-)4,000 +	0 +	0 =	0 +	0 +	0 +	(-)4,000
New Equation	11,000 +	7,000 +	3,000 =	5,000 +	0 +	0 +	16,000
(vi) Creditors accepted a bill for ₹ 1,500	0 +	0 +	0 =	(-)1,500 +	1,500 +	0 +	0
New Equation	11,000 +	7,000 +	3,000 =	3,500 +	1,500 +	0 +	16,000
(vii) Interest on capital ₹ 1,000	0 +	0 +	0 =	0 +	0 +	0 +	(-)1,000
New Equation	11,000 +	7,000 +	3,000 =	3,500 +	1,500 +	0 +	16,000
(viii) Transfer from capital to loan ₹ 5,000	0 +	0 +	0 =	0 +	0 +	5,000 +	(-)5,000
New Equation	11,000 +	7,000 +	3,000 =	3,500 +	1,500 +	5,000 +	11,000
(ix) Allotted shares to creditors ₹ 1,000	0 +	0 +	0 =	(-)1,000 +	0 +	0 +	1,000
New Equation	11,000 +	7,000 +	3,000 =	2,500 +	1,500 +	5,000 +	12,000

The above accounting equation proves that whatever the transaction, assets are always equal to capital and liabilities. The fact can also be verified by the Previous Financial Position (Balance Sheet).

Illustration 6: Prove that the accounting equation is satisfied in all the following transactions. Verify the result with Balance Sheet of the last new equation:

₹

Notes

(i) Rajesh started business with :	
Cash	20,000
Goods	12,000
Machine	8,000
(ii) He Purchased goods	5,000
(iii) Sold goods (Costing ₹ 2,000) for ₹	2,500
(iv) Purchased goods on credit	7,000
(v) Payment made to creditors in full settlement	6,900
(vi) Sold goods on credit (Costing ₹ 5,400)	6,000
(vii) Payment received from debtors	5,800
Discount allowed	200
(viii) Salaries paid	4,000
(ix) Wages outstanding	400
(x) Prepaid Insurance	100
(xi) Rent received	300
(xii) Amount withdrawn	3,000
(xiii) Interest on drawing	200
(xiv) Depreciation on machinery	800
(xv) Purchased goods on credit	17,000

Solution:

Accounting Equation

Transactions	Assets					= Liabilities			+ Capital
	Cash +	Stock + of Goods	Machine +	Debtors +	Prepaid Expenses	= Creditors +	Outstanding Expenses		
(i) Started business with:									
Cash ₹ 20,000									
Goods ₹ 12,000									
Machine ₹ 8,000	20,000 +	12,000 +	8,000 +	0 +	0 =	0 +	0 +		40,000
(ii) Purchased goods ₹ 5,000	(-) 5,000 +	5,000 +	0 +	0 +	0 =	0 +	0 +		0
New Equation	15,000 +	17,000 +	8,000 +	0 +	0 =	0 +	0 +		40,000
(iii) Sold goods (Costing ₹ 2,000) for ₹ 2,500	+ 2,500 +	(-) 2,000 +	0 +	0 +	0 =	0 +	0 +		500
New Equation	17,500 +	15,000 +	8,000 +	0 +	0 =	0 +	0 +		40,500
(iv) Purchased goods on credit ₹ 7,000	0 +	7,000 +	0 +	0 +	0 =	7,000 +	0 +		0
New Equation	17,500 +	22,000 +	8,000 +	0 +	0 =	7,000 +	0 +		40,500
(v) Payment made to creditors In full settlement ₹ 6,900	(-) 6,900 +	0 +	0 +	0 +	0 =	(-) 7,000 +	0 +		100
New Equation	10,600 +	22,000 +	8,000 +	0 +	0 =	0 +	0 +		40,600

(vi) Sold goods no credit (Costing ₹ 5,400) for ₹ 6,000	0 +	- 5,400 +	0 +	6,000 +	0 =	0 +	0 +	600
New Equation	10,600 +	16,600 +	8,000 +	6,000 +	0 =	0 +	0 +	41,200
(vii) Payment received from Debtors ₹ 5,800								
Discount allowed ₹ 200	+ 5,800 +	0 +	0 +	- 6,000 +	0 =	0 +	0 +	- 200
New Equation	16,400 +	16,600 +	8,000 +	0 +	0 =	0 +	0 +	41,000
(viii) Salaries paid ₹ 4,000	(-) 4,000 +	0 +	0 +	0 +	0 =	0 +		(-) 4,000
New Equation	12,400 +	16,600 +	8,000 +	0 +	0 =	0 +	0 +	37,000
(ix) Wages outstanding ₹ 400	0 +	0 +	0 +	0 +	0 =	0 +	400 +	(-) 4,000
New Equation	12,300 +	16,600 +	8,000 +	0 +	0 =	0 +	400 +	36,600
(x) Prepaid Insurance ₹ 100	(-) 100 +	0 +	0 +	0 +	100 =	0 +	0 +	0
New Equation	12,300 +	16,600 +	8,000 +	0 +	100 =	0 +	400 +	36,600
(xi) Rent received ₹ 300	+ 300 +	0 +	0 +	0 +	0 =	0 +	0 +	300
New Equation	12,600 +	16,600 +	8,000 +	0 +	100 =	0 +	400 +	36,900
(xii) Amount withdrawn ₹ 3,000	(-) 3,000 +	0 +	0 +	0 +	0 =	0 +	0 +	- 3,000
New Equation	9,600 +	16,600 +	8,000 +	0 +	100 =	0 +	400 +	33,900
(xiii) Interest on drawings ₹ 200	0 +	0 +	0 +	0 +	0 =	0 +	0 +	+ 200
New Equation	9,600 +	16,600 +	8,000 +	0 +	100 =	0 +	400 +	33,900
(xiv) Depreciation on machinery ₹ 800	0 +	0 +	- 800 +	0 +	0 =	0 +	0 +	- 800
New Equation	9,600 +	16,600 +	7,200 +	0 +	100 =	0 +	400 +	33,100
(xv) Purchased goods on credit ₹ 17,000	0 +	17,000 +	0 +	0 +	0 =	17,000 +	0 +	0 +
New Equation	9600 +	33,600 +	7,200 +	0 +	100 =	17,000 +	400 +	33,100

Balance Sheet

Liabilities	Amount (₹)	Assets	Amount (₹)
Creditors	17,000	Cash	9,600
Outstanding expenses	400	Stock in trade	33,600
Capital	33,100	Machine	7,200
		Prepaid expenses	100
	50,500		50,500

2.6. Summary

- According to **American Institute of Certified Public Accountants (AICPA)**, GAAP have substantial authoritative support and general acceptability. GAAP must be relevant (meaningful), objective (reliable) and feasible (implemented without much cost and complexity).
- Business is assumed to have distinct entity, i.e. existence other than the existence of its proprietors and other business units.

Notes

- Accounting transactions must have their monetary value. The worth of the transaction must be measured in terms of money.
- According to **International Accounting Standard** "*The enterprise is normally viewed as a going concern, that is as continuing in operation for the foreseeable future*". It is viewed that the enterprise has an intention to be carried on for longer period.
- The study revealed that accounting rotates round the three terms, i.e. assets, liabilities and capital. The entire accounting structure is based upon these three terms.

2.7. Review Questions

1. Give an example of a transaction which may be an expense for business and income for the businessman.
2. Name the concept responsible for the origin of 'Double Entry System'.
3. 'Business units last indefinitely'. Mention the concept on which the statement is based.
4. How is income received in advance (unearned income) shown in the accounting equation?
5. If goods costing ₹ 9,500 are sold for ₹ 10,000, show how the capital will be affected?
6. Point out one transaction which will affect capital only.
7. Explain Business Entity concepts.
8. Explain the concepts of money measurement.
9. Explain briefly the principle of Double Entry System.
10. Explain accounting equation in about 50 words.
11. What is meant by creditors for goods and creditors for expenses? How will these transactions affect assets, liabilities and capital?
12. Calculate total assets of the business if:
Jacob starts business with ₹ 1,00,000. He earned a profit of ₹ 20,000. He has to pay his creditors for goods ₹ 7000 and outstanding salary amounts to ₹ 1000.
13. Explain the following:
 - (a) Money measurement concept,
 - (b) Accounting period concept,
 - (c) Going concern concept,
 - (d) Dual aspect.
14. Explain the following with examples:
 - (a) Money measurement concept,
 - (b) Dual aspect,
 - (c) Accounting period.

15. Describe the fundamental accounting equations. How are the revenue and expenses account related to it?
16. Discuss any seven basic transactions resulting from the relationship of assets, liabilities and capital.
17. How are the following items in accounting equation dealt with?
 - (a) Outstanding expenses
 - (b) Prepaid expenses
 - (c) Accrued income
 - (d) Unearned income.
18. Accounting equation remains intact under all circumstances. Justify the statement with the help of an example.

Notes

Preparation of Final Accounts

Notes

Structure

- 3.1. Introduction
- 3.2. Recording of Business Transaction-Basis of Accounting
- 3.3. Single Entry System of Book-Keeping
- 3.4. Double Entry System of Book-Keeping
- 3.5. Classification of Accounts
- 3.6. Rules of Double Entry (or) Accounting Rules
- 3.7. Accounting Cycle
- 3.8. Books of Accounts: Recording, Posting and Preparation of Trial Balance
- 3.9. Trial Balance
- 3.10. Final Accounts
- 3.11. Adjustment
- 3.12. Summary
- 3.13. Review Questions

3.1. Introduction

The scope and importance of accounting is to provide variable information about a business enterprise to those persons who are directly or indirectly interested in the progress, performance and financial position of the concern.

Information is the basis for decision-making in an organisation. The efficiency and soundness of the management depends upon the availability of regular and correct information to those who exercise the managerial functions. Such persons may include owners, creditors, investors, employees, government, public, research scholars and the managers.

1. **Owners:** The owners of a business could contribute capital to be used for the purpose of starting and running the business. The ultimate aim of accounting is to provide necessary information to the owners relating to their business. They want to evaluate the past financial performance and also assess the future prospects through the accounting reports.
2. **Creditors:** Creditors, debenture holders, bankers and other financial institutions are interested in knowing about the short-term as well as long term financial position of the company. Because, they want to find out the ability of the firm to pay interest and principal as and when it becomes due for payment.

Notes

3. **Potential Investors:** Any investor, before making investment in any particular company shares, wants to know not only the earning capacity of the organisation but also its solvency position. For this purpose, investors take information from accounting reports to a great extent in order to determine the relative merits of the available investment opportunities.
4. **Employees:** Employees are the backbone of the organisation. They are interested in the earning capacity of a concern because their salaries, bonus, and pension schemes are dependent on the size of the profit earned.
5. **Government:** Government is the sole authority for the country's economic development. For the purpose of finding out overall economic growth point of view, the government is very much interested in accounting statements and reports in order to see the financial position of a particular unit. With the help of the accounting information, government is not only to prepare national account but also to impose tax and excise duty.
6. **Public:** The public as consumers is interested in accounting information in order to testify whether the control is properly exercised on production, selling and distribution for the purpose of reducing the prices of the goods they buy. And also they are interested to know, whether all the available economic resources of the concern are being properly utilised for the benefit of the common man or not. And at the same time, they want to examine any of the aspects of the business which can be detrimental to the public interest.
7. **Research Scholars:** Financial statements are very helpful to the research scholars. Enormous information are available from the accounting reports. Depending upon their research area, the researcher could get the data for providing their thesis on which they are working and hence to complete their research projects.
8. **Regulatory Agencies:** In order to protect the public from the fraudulent activities of the business, various governments, voluntary service institutions, and other agencies use accounting information not only for the tax assessment purpose but also in evaluating how well various business concerns are operating under legal framework.
9. **Managers:** The foremost responsibility of the managers of the organisation is to obtain maximum return over the capital invested without causing any harm to the interest of the shareholders. The manager would like to have a data regarding sales, expenses, assets, liabilities, etc. relating to next year and also the flow of fund for the purpose of the activities of a business. He also takes a decision and alters the decision in best way. In all these aspects, relevant accounting information is needed.

3.2. Recording of Business Transaction-Basis of Accounting

There are three different Basis systems of accounting for recording of business transaction. They are: (i) cash basis accounting, (ii) mercantile basis or Accrual basis of accounting, and (iii) mixed-basis of accounting.

Notes

(i) Cash Basis of Accounting

Under this system of accounting, actual cash received and actual cash payments are recorded. Credit transactions are not recorded at all until the cash is actually received or paid. Non-trading concerns such as charitable institution, a club, a college, etc. and a professional man like a lawyer, a doctor, a chartered accountant, etc. maintains accounts under this system only. This basis of accounting is not a complete record of financial transactions of a trading period, because all outstanding transactions are not recorded.

(ii) Mercantile Basis of Accounting or Accrual Basis of Accounting

According to mercantile system of accounting, entries are made not only for actual receipt or payment of cash but also for the amount having been due for payment or receipt. Simply, both cash transactions and credit transactions are recorded and even non-trading concerns follow this type of accounting. Financial transaction discloses correct profit or loss for a particular period and also exhibits true financial position of the business on a particular day.

Normally, trading organisations, to prepare final account for the purpose of finding out profit or loss during a particular period, use the mercantile system of accounting.

(iii) Mixed System of Accounting

Under this basis of accounting, both cash system and mercantile system are followed. Simply, combination of cash system and mercantile system is called mixed system. Some of the records are maintained under the cash system and remaining others are maintained under mercantile system.

Apart from the basis of accounting, following are the methods of accounting to be followed in a normal practice. They are: (i) Single entry method and (ii) Double entry method.

3.3. Single Entry System of Book-Keeping

Under the single entry system, the principles of Double entry book-keeping are not followed. Normally, every transaction has a two fold aspect. But in the single entry system of accounting only one aspect is recorded. So, it is called incomplete method of Book-keeping. Trial Balance, Trading Account, Profit and Loss account, and Balance Sheet cannot be prepared with the help of the single entry system. This system is mainly followed by those organisations that have only limited number of transactions.

3.4. Double Entry System of Book-Keeping

Double entry system of book-keeping refers to particular transactions which are entered in two aspects. It is based on the dual aspect concept. Posting of each transaction in two different accounts on opposite sides for equal value is known as the double entry system of book-keeping. [Normally it is the most accurate, complete and scientific method of accounting].

Simply, every debit must have a corresponding credit and vice versa. Most of the trading organisations follow the double entry system of accounting.

Advantages of Double Entry System

Notes

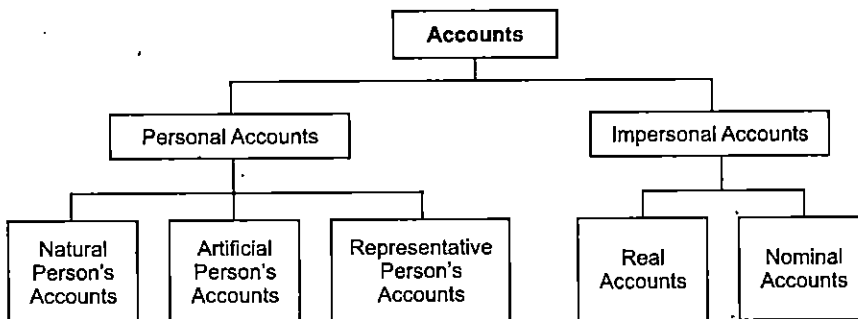
- (i) It provides a complete record of the financial transactions which is maintained.
- (ii) It supplies complete information about the business.
- (iii) It provides a check on the arithmetical accuracy of books of accounts by preparing a trial balance by taking balances of all ledger accounts.
- (iv) It is helpful in ascertaining profit or loss of a particular period by preparing the trading and profit and loss account.
- (v) It helps the businessman to evaluate the progress of his business through meaningful comparison of operating and financial performance over a period of time.
- (vi) It helps in preventing frauds and errors.
- (vii) It helps income tax and sales tax authorities.
- (viii) It is helpful in preparing accurate claim for loss of stock as a result of fire to the insurance company.

Disadvantages of Double Entry System

- (i) This system requires to maintain wider number of books of accounts, which is not convenient to small concerns.
- (ii) There is no guarantee of absolute accuracy of the books of account which are maintained.
- (iii) It requires more clerical labour, so the system is costly.

3.5. Classification of Accounts

Normally, Accounts are classified into mainly two classes viz. (1) Personal accounts and (2) Impersonal accounts. These impersonal accounts are further subdivided into (i) Real account and (ii) Nominal account. But usually three types of accounts namely Personal Accounts, Real or Property Accounts and Nominal or Fictitious Accounts are opened to keep a complete record of business transactions.



1. Personal Accounts

Personal Accounts are those which are related to persons. A separate account is prepared for each person, because the firm deals its transactions with a number of persons. Such accounts can take the following forms:

- (i) Natural person's accounts e.g., Kumar's account

- (ii) Artificial persons' or body of persons' accounts e.g., Bank account, any company's account
- (iii) Representative person's accounts, e.g. salaries outstanding account, prepaid expenses account.

Notes

2. Impersonal Accounts

- (i) **Real Accounts or Property Accounts:** Real Accounts are those accounts which can be related to a property, an asset or possession, e.g. plant account, machinery account, cash account, etc. Separate account is prepared for each class of assets of the organisation.
- (ii) **Nominal Accounts:** Nominal accounts are those which are related to the business expenses or losses and incomes or gains.
For example: Wages account, discount account, commission account.

3.6. Rules of Double Entry (or) Accounting Rules

Normally, most of the organisations follow the double entry system of accounting. The rules of double entry are as follows:

- (i) **Personal Accounts**
Rules: Debit the Receiver.
Credit the giver
- (ii) **Real or property Accounts**
Rules: Debit what comes in.
Credit what goes out.
- (iii) **Nominal Accounts**
Rules: Debit all expenses and losses.
Credit all incomes and gains.

3.7. Accounting Cycle

Accounting cycle refers to an order of accounting procedures which are needed to be repeated in the same order during each accounting period.

Recording



Classifying



Summarising

- (i) **Recording:** First and foremost activity of accounting is recording of business transactions in the journal.
- (ii) **Classifying:** Classifying the transactions in the journal by posting them to the appropriate ledger accounts to find out at a glance the total effect of such transactions in a particular account.
- (iii) **Summarising:** Summarising simply refers to consolidation of one year transactions with the help of ledger Balances. Based upon these Balances,

Trial Balance, and final accounts are to be prepared with a view to ascertaining profit or loss made during the particular financial year or trading period.

3.8. Books of Accounts: Recording, Posting and Preparation of Trial Balance

Notes

Journal

Journal is derived from the French word "Jour" which means a day. Journal, therefore means day-to-day transactions which are recorded in the books. It is in the form of debit and credit, and is maintained with the help of accounting rules. The process of recording the transactions in a journal is called journalising.

A journal may be defined as the book of original or prime entry containing a chronological record of the business transactions.

Journal Format

1 Date		2 Particulars	3 L.F.	4 Debit (Dr.) (₹)	5 Credit (Cr.) (₹)
Year	Date	Name of the Account to be debited		xx	
Month		Name of the Account to be credited			
		To Narration			xx

Explanation

- 1. Date:** The date on which the transaction takes place is entered in the journal.
- 2. Particulars:** Under the particulars column, the names of the account to be debited is written in the first line, and in the second line, the account to be credited is written preceded by the word 'To Narration' which also explains briefly about the transaction.
- 3. L.F.:** It stands for ledger folio. It means the page number in the ledger in which the entry is posted.
- 4. Debit:** Name of the account to be debited against the 'Dr' account is entered.
- 5. Credit:** Name of the account to be credited against the 'Cr' account is entered.

Procedure for Journalising

In any particular transaction first of all we have to identify the receiving aspect and giving aspect of the transaction. All the transactions affect at least two of the basic accounting.

The rule for journalising should be selected as follows:

Notes

Nature of Account	Rules for Debiting an Account	Rule for Crediting an Account
1. Personal Account	Debit the Receiver	Credit the giver
2. Real Account	Debit what comes in	Credit what goes out
3. Nominal Account	Debit all expenses and losses	Credit all incomes and gains

Illustrations and Solutions

Illustrations 1: Journalise the following transaction in the journal of Mr. T.R. Ramu.

1. 2019, Jan 1 Ramu commenced business with a capital of ₹ 50,000

↓
Personal A/c

↓
Real A/c

The above transaction has to affect the two accounts, i.e. (i) Real A/c and (ii) Personal A/c. After finding out the affected accounts, we have to apply the accounting rules as against the particular transaction. Here, cash is coming to the business and Ramu is the giver.

Date	Particulars	L.F.	Dr. (₹)	Cr. (₹)
2019, Jan 1	Cash A/c Dr. To Ramu's Capital A/c (Being the amount invested in business)		50,000	50,000

2. Amount Deposited in Canara Bank ₹ 20,000

↓ ↓
Personal A/c Real A/c

Affected Accounts in the above transaction:

- (i) Personal Account
(ii) Real Account

In the above transaction, the Canara Bank is the artificial person to receiver the money. It relates to personal Accounts. As per the personal Accounts rules, Debit the receiver. Here Canara Bank Account is debited and amount relates to real account. Account goes out according to real account credit what goes out, Here cash goes out. So, the cash A/c is credited.

Date	Particulars	L.F.	Dr. (₹)	Cr. (₹)
2019, Jan 2	Canara Bank A/c Dr. To Cash A/c (Being cash and to Canara Bank)		20,000	20,000

3. Goods Purchased for cash ₹ 10,000

↓ ↓
 Real A/c Real A/c

This is the cash transaction. The two aspects to be recorded are goods or purchase account and cash account. Both are related to Real Account. Now, we apply Real Account rules.

Notes

Date	Particulars	Amount Dr. (₹)	Amount Cr. (₹)
2019, Jan 3	Purchase or goods A/c Dr. To Cash A/c	10,000	10,000

4. Purchase of goods worth ₹ 5,000 from Murali

↓ ↓ ↓
 Real A/c Real A/c Personal A/c

This is the credit transaction. But, the above transaction affects three accounts.

- Namely, (i) Good → Real Account
 (ii) Amount → Real Account
 (iii) Murali → Personal Account

Here, there is no need to give the effect on one Real Account [*i.e.*, Amount – Real Account]. Because, at the time of purchase, there is no settlement of money.

Goods Account relates to the Real Account. As per the Real Account rules, Goods Account is to be debited.

Murali is the Personal Account. As per the Personal Account rules Murali is the giver. So, his account is to be credited.

Date	Particulars	Amount Dr. (₹)	Amount Cr. (₹)
2019, Jan 4	Goods or Purchase A/c Dr. To Murali Account	5,000	5,000

Credit Transaction and Cash Transaction

If Purchase and Sales Transaction bears a name means it is treated as credit transaction. And at the same time, even though there is a name, specifically mentioned cash means, it is treated as cash transaction.

5. Sold goods to Rajan Brothers for ₹ 10,000

↓ ↓ ↓
 Real A/c Personal A/c Real A/c

This is a credit transaction for two reasons:

- (i) Purchaser's name is given.
 (ii) There is no mention that it is cash transaction.

The above transaction affects the three Accounts, *i.e.*

Notes

- (i) Real Account (goods)
- (ii) Personal Account (Rajan Brothers)
- (iii) Real Account (Amount)

In the three accounts, we have to give the effect on only two accounts
i.e., Goods account and Personal account.

Here, Rajan Brothers receives the goods, and goods go out from the business.
So, the journal entry will be

Date	Particulars	Amount Dr. (₹)	Amount Cr. (₹)
2019, Jan 4	Rajan Brothers A/c Dr. To Goods or Sales A/c	10,000	10,000

6. Sold goods worth ₹ 2,500

↓ ↓
Real A/c Real A/c

This is the cash transaction. The above transaction affects two accounts, i.e.

- (i) Real Account → goods
- (ii) Real Account → Amount.

Amount of ₹ 2,500 is coming to the business. As per the Real Account rules, Debit when comes in. Here cash comes in. So, cash account is debited and goods go out from the business. It is also a real account. As per the Real Account rules, Credit what goes out. Here, goods go out from the business, so cash account is credited.

Date	Particulars	Amount Dr. (₹)	Amount Cr. (₹)
2019, Jan 6	Cash A/c Dr. To Goods A/c	2,500	2,500

7. Amount of ₹ 9,000 Received from Rajan Brothers as full settlement

↓ ↓
Real A/c Personal A/c

This transaction directly affects two accounts.

- (i) Real Account (Amount)
- (ii) (Personal Account) Rajan Brothers

Indirectly, it affects one account, i.e. Nominal Account (Discount Account).

Actual sale of goods worth to Rajan Brothers	₹ 10,000
Amount Received from Rajan Brothers	₹ 9,000
The Amount treated as Discount A/c	₹ 1,000

Here, we allow the discount to Rajan Brothers.

For receiving cash ₹ 9,000, Cash Account is to be debited. Discount is the Nominal Account. As per the Nominal Account rules Debit all expenses and losses. Here, Discount is the Expenses. So, Discount Account is to be debited in the value

of ₹ 1,000. Rajan Brothers is the giver, so his account is to be credited. The journal entry will be

Preparation of Final Accounts

Date	Particulars	Amount Dr. (₹)	Amount Cr. (₹)
2019, Jan 7	Cash A/c Dr. Discount A/c Dr. To Rajan Brothers A/c	9,000 1,000	10,000

Notes

8. Paid Salaries ₹ 25,000

↓ ↓
Nominal A/c Real A/c

The transaction has to affect the two accounts, i.e. (i) Salaries account relates to Nominal Account. Its rule is debit all expenses and losses and accordingly it is to be debited. (ii) Cash account relates to real account. Its rule is credit what goes out. Accordingly it is to be credited. Therefore, the journal entry will be.

Date	Particulars	Amount Dr. (₹)	Amount Cr. (₹)
2019, Jan 8	Salaries A/c Dr. To Cash A/c	25,000	25,000

9. Commission Received ₹ 3,500

↓ ↓
Nominal A/c Real A/c

The transaction is obviously by cash and is an income. So, the two important aspects are commission and cash. (i) Commission account relates to Nominal Account. As per the Nominal account rules credit all incomes and gains, accordingly it is to be credited. (ii) Cash account relates to Real Account. As per the Real account rules Debit what comes in. Accordingly cash account is to be debited. The journal entry will be.

Date	Particulars	Amount Dr. (₹)	Amount Cr. (₹)
2019, Jan 9	Cash A/c Dr. To Commission A/c	3,500	3,500

10. Entertainment expenses ₹ 1,000 paid

↓ ↓
Nominal A/c Real A/c

This is a cash transaction. Cash is going out and the entertainment is the expenditure. Cash relates to Real Account. As per Real Account Rules credit what goes out and accordingly it is to be credited. Entertainment relates to Nominal Account. Its rule is Debit all expenses and Losses. Accordingly, it is to be Debited. So, the journal entry will be.

Notes

Date	Particulars	Amount Dr. (₹)	Amount Cr. (₹)
2019, Jan 10	Entertainment Expn. A/c Dr. To Cash A/c	1,000	1,000

Ledger

Ledger is a register having a number of pages which are numbered consecutively. Simply, ledger means consolidation of similar types of transactions under one head. In other words, a ledger may be defined as a summary statement of all the transactions relating to a person, asset, expenses or income which have taken place during a given period of time and show their net effect.

The process of preparation of accounts from the journal into ledger is called posting in the ledger. Examples of ledger accounts include sales account, purchase account, sales returns account, cash account, and so on.

Format of Ledger

Ledger can be divided into two parts: (i) left hand side called debit side (Dr) and (ii) right hand side called credit side (Cr). Debit side starts with 'To' and credit side starts with 'By'. Most of the authors follow these practices.

Debit (Dr.)				Ledger			Credit (Cr.)
Date	Particulars	Folio	Amount	Date	Particulars	Folio	Amount

Posting of Journal Entry into Ledger

Illustration 2: Given the following journal entry, how do you post in into relevant ledger accounts.

Date	Particulars	L.F.	Dr. ₹	Cr. ₹
2019, Jan 1	Cash A/c Dr. To Raju's Capital A/c [Being the business started]		75,000	75,000

Solution:**Cash Account****Dr.****Cr.**

Date	Particulars	Folio	Amount (₹)	Date	Particulars	Folio	Amount (₹)
1.1.19	To Raju's Capital A/c		75,000				

Capital Account**Dr.****Cr.**

Date	Particulars	Folio	Amount (₹)	Date	Particulars	Folio	Amount (₹)
				1.1.19	By Cash A/c		75,000

How to Balance an Account

First, we have to compute the total on each side separately. Next the side which has the highest value, should be put on both sides. Then, we have to find the difference from the lower value side. This value is called Balance c/d. This is the closing balance for the end of the given period. This is called Balance Brought down.

Notes

Illustration 3: Journalise the following transaction in the books of Kumar and prepare necessary ledger accounts:

2019, Jan. 1. Kumar started a Business with the capital of ₹ 60,000.

3. Amount received from Bank ₹ 10,000.

4. Purchased goods from Ravi for ₹ 5,000.

5. Returned goods to Ravi for ₹ 1,000.

6. Sold goods for cash ₹ 5,000.

9. Sold goods to Lakshman for ₹ 3,500.

10. Amount of ₹ 3,750 paid to Ravi as full settlement.

12. Lakshman returned the goods worth ₹ 500. Complaint about damages.

20. Paid Salaries ₹ 2,500.

21. Dividend received ₹ 1,000.

22. Amount paid to Mohan through a bank at ₹ 1,500.

24. Withdraw money from business for private use ₹ 1,000.

30. Withdraw money from Bank for Business use ₹ 3,000.

Solution: Journalisation (In the books of Kumar)

Date	Particulars	L.F.	Dr. (₹)	Cr. (₹)
2019, Jan 1	Cash A/c Dr. To Kumar Capital A/c [Being the business started]		60,000	60,000
3	Cash A/c Dr. To Bank A/c [Being the cash received from Bank]		10,000	10,000
4	Goods A/c Dr. To Ravi A/c [Being Goods purchased from Ravi on credit basis]		5,000	5,000
5	Ravi A/c Dr. To Purchase Return A/c [Being the goods returned to Ravi on account of damages]		1,000	1,000
6.	Cash A/c Dr. To Goods A/c [Being the goods sold for cash]		5,000	5,000

Notes

9	Lakshman A/c To Goods A/c [Being the goods sold to Lakshman on the credit Basis]	Dr.	3,500	3,500
10	Ravi A/c To Cash A/c To Discount A/c [Being the payment of full Settlement]	Dr.	4,000	3,750 250
12	Sales Return A/c or Goods A/c To Lakshman A/c [Being the goods returned to Lakshman]	Dr.	500	500
20	Salaries A/c To Cash A/c [Being Salaries paid]	Dr.	2,500	2,500
21	Cash A/c To Dividend A/c [Being Dividend received]	Dr.	1,000	1,000
22	Mohan A/c To Bank A/c [Being amount paid to Mohan through bank]	Dr.	1,500	1,500
24	Drawing A/c To Cash A/c [Being withdrawn money from business for private use]	Dr.	1,000	1,000
30	Cash A/c To Bank A/c [Being Withdrawn money from bank for business use]	Dr.	3,000	3,000

Preparation of Ledger Accounts

Cash Account

Dr.

Cr.

Date	Particulars	Folio	Amount (₹)	Date	Particulars	Folio	Amount (₹)
1.1.19	To Capital A/c		60,000	20.1.19	By Salaries		2,500
3.1.19	To Bank A/c		10,000	24.1.19	By Drawings		1,000
6.1.19	To Goods A/c		5,000	31.1.19	By Balance c/d		79,250
10.1.19	To Ravi A/c		3,750				
21.1.19	To Dividend A/c		1,000				
30.1.19	To Bank A/c		3,000				
			82,750				82,750
1.2.19	To Balance b/d		79,250				

Kumar Capital Account

*Preparation of Final
Accounts*

Notes

Date	Particulars	Folio	Amount (₹)	Date	Particulars	Folio	Amount (₹)
31.1.19	To Balance c/d		60,000	1.1.19	By Cash A/c		60,000
			60,000				60,000
				1.1.19	By Balance b/d		60,000

Bank Account

Date	Particulars	Folio	Amount (₹)	Date	Particulars	Folio	Amount (₹)
31.1.19	To Balance c/d		14,500	3.1.19	By Cash A/c		10,000
				22.1.19	By Mohan A/c		1,500
				30.1.19	By Cash A/c		3,000
			14,500				14,500
				1.2.19	By Balance b/d		14,500

Goods Account

Date	Particulars	Folio	Amount (₹)	Date	Particulars	Folio	Amount (₹)
4.1.19	To Ravi A/c		5,000	6.1.19	By Cash A/c		5,000
31.1.19	To Balance c/d		3,500	9.1.19	By Lakshman A/c		3,500
			8,500				8,500
				1.2.19	By Balance b/d		3,500

Ravi Account

Date	Particulars	Folio	Amount (₹)	Date	Particulars	Folio	Amount (₹)
5.1.19	To Purchase			4.1.19	By Goods A/c		5,000
	Return A/c		1,000				
10.1.19	To Cash A/c		3,750				
	To Discount A/c		250				
			5,000				5,000

Lakshman Account

Date	Particulars	Folio	Amount (₹)	Date	Particulars	Folio	Amount (₹)
9.1.19	To Goods A/c		3,500	12.1.19	By Sales		
					Return A/c		500
				31.1.19	By Balance c/d		3,000
			3,500				3,500
1.2.19	To Balance b/d		3,000				

Notes

Discount Account

Date	Particulars	Folio	Amount (₹)	Date	Particulars	Folio	Amount (₹)
1.1.19	To Balance c/d		250	10.1.19	By Ravi		250
			250				250
				1.2.19	By Balance b/d		250

Sales Return Account

Date	Particulars	Folio	Amount (₹)	Date	Particulars	Folio	Amount (₹)
12.1.19	To Lakshman A/c		500	31.1.19	By Balance c/d		500
			500				500
1.2.19	To Balance b/d		500				

Salaries Account

Date	Particulars	Folio	Amount (₹)	Date	Particulars	Folio	Amount (₹)
20.1.19	To Cash A/c		2,500	31.1.19	By Balance c/d		2,500
			2,500				2,500
1.2.19	To Balance b/d		2,500				

Mohan's Account

Date	Particulars	Folio	Amount (₹)	Date	Particulars	Folio	Amount (₹)
21.1.19	To Bnak A/c		1,500	31.1.19	By Balance c/d		1,500
			1,500				1,500
1.2.19	To Balance b/d		1,500				

Drawing Account

Date	Particulars	Folio	Amount (₹)	Date	Particulars	Folio	Amount (₹)
24.1.19	To Cash A/c		1,000	31.1.19	By Balance c/d		1,000
			1,000				1,000
1.2.19	To Balance b/d		1,000				

Dividend Account

Date	Particulars	Folio	Amount (₹)	Date	Particulars	Folio	Amount (₹)
31.1.19	To Balance c/d		1,000	21.1.19	By Cash A/c		1,000
			1,000				1,000
				1.2.19	By Balance b/d		1,000

From the above ledger accounts it can be noticed that

- (i) Ravi Account is settled.
- (ii) Some Accounts showing debit balances.
- (iii) Some Accounts showing credit balances.

3.9. Trial Balance

Every transaction is recorded under double entry system. The fundamental Principle of Double entry system is that for every debit there must be a corresponding credit. All the ledger accounts are balanced. After arriving at the figures, total of all debit balances must be equaled to the total of credit balances if the accounts are arithmetically accurate.

At the end of the financial year, or at any time, the balances of all the ledger accounts are extracted and written up, a statement is prepared which is known as Trial Balance.

Simply, Trial Balance is a settlement which is prepared in order to testify the arithmetical accuracy of entire financial transaction. Agreement of the Trial Balance exposes both the aspects of each transaction which have been recorded and that the books are arithmetically accurate. Suppose Trial Balance does not agree, it means there are errors which must be detected and rectified before preparing the final account. Trial Balance creates a link between ledger accounts and final accounts.

Aim of Trial Balance

1. To avoid unnecessary verification of all the pages of ledger.
2. It is a suitable and easy method of verifying the arithmetical accuracy of the entire transaction.
3. Trial Balance agrees only when the Debit side total is equal to credit side total. Otherwise, there are some errors.
4. It helps in the preparation of final Account, *i.e.* Trading Accounts, Profit and Loss Account and Balance Sheet.

Methods of Preparing Trial Balance

There are two methods available for preparing Trial Balance.

1. Total Method
2. Balances Method

Under the Total method, without balancing the ledgers, Debit and Credit totals of each account are shown in the two columns, *i.e.* debit side total in the debit column of Trial balance and credit side total is put in the credit column of Trial Balance.

Under the Balances method, the balances are extracted from various ledgers. Simply Debit side of the ledger balance is transferred to Debit side of trial balance, credit side of the ledger balance is transferred to credit side of Trial Balance. The nil balance accounts are not taken into account in this method. So, this method is more convenient to adopt and to be followed at regular practice.

Rules

- Debit side = Either Asset Account balances or Expenses Account balances
Credit side = Either Liability Account balances or Income Account balances

Format of Trial Balance

Trial Balance of as on

Notes

Notes

S.No.	Particulars	Debit Balance Amount (₹)	Credit Balance Amount (₹)
-------	-------------	-----------------------------	------------------------------

NOTE: Generally, whenever we prepare the Trial Balance, if it tallies, it is an indication that all the transactions recorded in the books are correct. Suppose if the trial balance disagrees, beyond our attention the difference amount is placed as in the Suspense Account. Do attempt suspense account only in few cases.

Illustration 4: Prepare Trial Balance as on 31.03.2018 from the following balances of Mr. Ravi:

Capital	1,00,000
Sales	1,50,000
Plant & Machinery	60,000
Purchases	50,000
Sales Returns	5,000
Wages	10,000
Sundry Creditors	60,000
Bad Debts	7,000
Bad Debts Provision	3,000
Land & Buildings	1,00,000
Debenture	45,000
Drawings	10,000
Commission Received	7,500
Auditor's Fees	6,500
Purchase Return	10,000
Bills Payable	9,000
Carriage Inwards	2,000
Goodwill	10,000
Reserve Fund	25,000
Wages & Salary	5,500
Carriage Outwards	1,500
Stock on 01.04.2001	25,000
Debtors	49,000
Interest Received	4,000
Travelling Expenses	5,000
Bank Overdraft	3,000
Trade Expenses	3,400
Motor Vehicle	8,000
Rent Received	2,000
Leasehold Property	60,600

Solution:*Preparation of Final
Accounts***Trial Balance of Mr. Ravi as on 31st March 2018**

Particulars	Debit (₹)	Credit (₹)
Capital	—	1,00,000
Sales	—	1,50,000
Plants & Machinery	60,000	—
Purchases	50,000	—
Sales Returns	5,000	—
Wages	10,000	—
Sundry Creditors	—	60,000
Bad Debts	7,000	—
Bad Debts Provision	—	3,000
Land & Buildings	1,00,000	—
Debentures	—	45,000
Drawings	10,000	—
Commission Received	—	7,500
Auditors's Fees	6,500	—
Purchase Return	—	10,000
Bills Payable	—	9,000
Carriage Inwards	2,000	—
Goodwill	10,000	—
Reserve Fund	—	25,000
Wages & Salary	5,500	—
Carriage Outwards	1,500	—
Stock 1.4.2001	25,000	—
Debtors	49,000	—
Interest Received	—	4,000
Travelling Expenses	5,000	—
Bank Overdraft	—	3,000
Trade Expenses	3,400	—
Motor Vehicle	8,000	—
Rent Received	—	2,000
Leasehold property	60,600	—
	4,18,500	4,18,500

Notes

NOTE: Before the preparation of the Final Account, we have to know the following concepts and their specifications. Because these four concepts are the fundamentals to all the proceedings of Accounting, either for Trial Balance or for Final Account.

I. Income

Money earned by the concern due to rendering of services or sale of goods.

Example/Specification:

Notes

Commission Received
Rent Received
Dividend Received
Interest on Drawings
Sales
Bad Debts Recovered
Interest Received

Interest on Investment Received
Apprentice Premium Received
Rent Received on sub-letting
Rent from Tenants
Income from any other sources
Miscellaneous Revenue Receipt
Salary Received

II. Expenses

Expenses are those which can be incurred, i.e. amount paid for the purpose of purchasing of goods or those who render services in our organisation.

Wages paid
Salaries paid
Commission paid
Rent paid
Interest paid
Oil, Water
Gas, Electricity Charges paid

Carriage Inwards
Carriage Outwards
Freight on Purchases
Customs Duty
Advertisement Expenses paid
Interest on Bank Loan
Interest on Capital

Drawings
Office Salaries
Telephone Charges
Legal Charges
Audit Fees
General Expenses
Discount Allowed
Selling and Distribution Expenses

Discount on Bills
Loss of Fire not covered by the
Insurance company
Manager's Remuneration
Insurance
Bad Debts
Agents Commission

III. Assets

Anything which possesses certain monetary value is called Assets.

Example :

Current Assets

Cash in hand and at Bank
Sundry Debtors
Bills Receivable
Stock in Trade
Short-term Investments
Marketable Securities
Accrued Incomes
Prepaid Expenses

Fixed Assets

Land & Buildings
Machinery
Furniture & Fittings
Loose Tools and Spares
Investments
Motor Van

Others

Preliminary Expenses
Goodwill
Patents and Trade Mark
Prepaid Expenses

IV. Liabilities

A Business organisation which is liable to pay a certain sum of money to the outsiders is called liabilities.

Example:

Capital	Bank Overdraft
Reserve Fund	Outstanding Expenses
Debenture	Deposits
Bank Loan	Incomes received in Advance
Mortgage Loan	Expenses due but not paid
Sundry Creditors	Proposed Dividend
Bills Payable	Provision for Taxation

Notes

3.10. Final Accounts

Final Accounts are otherwise called Annual accounts. Normally, Final Accounts are prepared at the end of the financial year or Accounting year. The purpose of preparing Final Accounts is to enable one to know the progress of the business, profit or loss and financial position of the firm at the right time.

The preparation of Final Account is not the first step of the Accounting process but it is the final product of the accounting process. It will give valuable information to the management and outsiders at the end of the Accounting period. Only after the preparation of Trial Balance it is possible to prepare Final Account. Final Account consists of the following parts.

1. Trading Account, 2. Profit and Loss Account, 3. Balance Sheet.

1. Trading Account

Trading Account is prepared to know the trading results or gross profit on trading of the business. Simply, it is to find out the gross profit from business due to buying and selling of goods or services during a particular period. In other words, Gross profit is the difference between the sales and the cost of goods sold.

In business, the expenditure and incomes are classified into Direct and Indirect. All the direct expenditure are debited into the debit side of the Trading Account and all the indirect incomes are credited into the credit side of the Trading Account. After transferring all the above details, we have to balance the Trading Account. If the balance is in the debit side it means the business is getting profit and named as Gross profit. Suppose the balance is in the credit side, it shows Loss and it is called Gross Loss. The Gross Profit or Gross Loss is transferred to the Profit and Loss Account either on the Credit side or Debit side.

2. Profit and Loss Account

Profit and Loss Account is prepared to find out the net profit or net loss of the business. All the indirect incomes and expenditure are transferred to the Profit and Loss Account on the credit side and debit side respectively. After transferring all details to the Profit and Loss Account, we balance this account. If the balance is in debit side it is called Net profit. Suppose, the balance is in the credit side it is called as Net Loss. Net profit is transferred to the balance sheet Liabilities side and added to the capital. If it is Net Loss it will be deducted from the capital.

Notes

3. Balance Sheet

A Balance Sheet is a statement which is prepared for the purpose of finding out the Assets and liability position of the concern for the particular period. A Balance Sheet is also described as "Statement showing the sources and application of funds." It is a statement and not an account and prepared from real and personal Accounts. It has two sides. The left side of the balance sheet describes the Liabilities and Capital position. The right hand side of the balance sheet describes all the assets and investments.

Trading, Profit & Loss Account disclose the financial results of the concern at the end of the year. But the Balance Sheet discloses the Assets and Liability Position of the Concern as on the date.

Specimen for of Final Account Trading Account for the year ended ...31.3.

Dr.

Cr.

Particulars	Amount (₹)	Amount (₹)	Particulars	Amount (₹)	Amount (₹)
To Opening Stock		XX	By Sales	XX	
To Purchase	XX		Less : Sales Return	XX	XX
Less: Purchase Return	XX	XX	By Closing Stock		XX
			By Goods destroyed by fire		XX
To Wages		XX	By Gross Loss		XX
To Carriage inward		XX	[Transferred to P & L A/c debit side]		
To Manufacturing Expenses		XX			
To Fuel and Power		XX			
To Motive Power		XX			
To Coal, Water, Gas & Electricity		XX			
To Clearing Charges		XX			
To Import Duty		XX			
To Customs Duty		XX			
To Freight on Purchase		XX			
To Factory Rent and Insurance		XX			
To Works Managers Salary		XX			
To Gross Profit (B/I) (Transferred to P & L A/c Credit Side)		XX			XX

Profit and Loss Account for the year ended 31.3

Dr.

Cr.

Particulars	Amount (₹)	Amount (₹)	Particulars	Amount (₹)	Amount (₹)
To Gross Loss (Transferred from Trading A/c)		XX	By Gross Profit (Transferred from Trading A/c)		XX
To Advertisement Expenses		XX	By Rent received		XX

Notes

To Carriage outwards	XX	By Commission received	XX
To Bank Charges	XX	By Incomes from Investments	XX
To Salaries	XX	By Interest received	XX
To Rent and Taxes	XX	By Discount received	XX
To Stationeries	XX	By Income from another source	XX
To Insurance	XX	By Discount on Creditors	XX
To Trade Expenses	XX	By Interest on Drawings	XX
To Interest on Capital	XX	By All Business income Other than that appeared in Trading Account credit side	XX
To Interest on Loan	XX		
To Establishment Expenses	XX	By Net Loss	XX
To Selling & Distribution Expn.	XX		
To Sundry Expenses	XX	(Transferred to Balance sheet assets side)	
To Audit Fees	XX		
To Telephone Charges	XX		
To Depreciation	XX		
To Repair and Maintenances	XX		
To Bad Debts	XX		
To Bad Debts provision	XX		
To Loss on Sale of Fixed Assets	XX		
To Loss on stock by fire	XX		
To Agents Commission	XX		
To Discount on Debtors	XX		
To All Business Expenses (Other than that appeared in Trading Account debit side)			
By Net Profit	XX		
(Transferred to Balance sheet Liability side)	XX		XX

Balance Sheet as on 31.3

Dr.

Cr.

Liabilities	Amount (₹)	Amount (₹)	Liabilities	Amount (₹)	Amount (₹)
Capital		XX	Cash in Hand		XX
Add: Net Profit		XX	Cash at Bank		XX
		XX	Sundry Debtors		XX
(-) Less: Drawings + Interest on Drawings	XX XX	XX	Investments		XX
		XX	Marketable Securities		XX
Add: Interest on Capital		XX	Bills Receivable		XX

Notes

Less: Income Tax	XX	Prepaid Expenses	XX
Sundry Creditors	XX	Machinery	XX
Bills Payable	XX	Building	XX
Bank Overdraft	XX	Furniture and Fittings	XX
Outstanding Expenses	XX	Loose tools	XX
Loan from Banks	XX	Motor Car	XX
Mortgages	XX	House & Carts	XX
Debenture	XX	Goodwill Patents & Trade Mark	XX
Reserve Fund	XX	Preliminary Expenses	XX
Income Received in Advance	XX	Profit & Loss A/c (Net Loss)	XX
		Closing Stock	XX

3.11. Adjustment

The ultimate aim of the Trading and Profit and Loss Account is to know the real Profit or Loss of the concern during a given period. The purpose of the Balance sheet is to know the financial position at a given period. True profit can be arrived at after adjusting all pending bills and outstanding expenses and incomes through entries. These entries which are passed at the end of the accounting period are called adjustment entries. The following important adjustments which are to be made at the end of the year are as follows.

Important Adjustments

1. Closing stock
2. Outstanding expenses
3. Prepaid or unexpired expenses
4. Income earned but not received or Accrued income
5. Income received in advance
6. Depreciation
7. Interest on capital
8. Interest on drawings
9. Interest on loan
10. Bad debts
11. Provision for bad and doubtful debts
12. Provision for discount on debtors
13. Provision for discount on creditors
14. Goods distributed as free of sample
15. Loss of stock by fire

In the actual sense all the above adjustments are given outside the Trial Balance. While preparing the Final accounts all the adjustments are to be considered. Normally, all the adjustments will appear at two places in the final accounts, *i.e.* either

- (i) Trading Account and Balance Sheet or
- (ii) Profit & Loss Account and Balance Sheet.

Adjustment and their Treatment

Preparation of Final
Accounts

1. *Closing Stock*
 - Trading Account - Credit side
 - Balance Sheet - Asset side
2. *Outstanding Expenses*
 - Trading or Profit & Loss A/c - Debit side
 - Balance Sheet - Liability side
3. *Prepaid Expenses*
 - Profit & Loss Account - Credit side
 - (Subtract from respective expenses)
 - Balance Sheet - Asset side
4. *Income Due but not Received*
 - Profit & Loss Account - Credit side
 - (Add with respective incomes)
 - Balance Sheet - Asset side
5. *Income Received in Advance*
 - Profit and Loss Account - Credit side
 - (Subtract from respective incomes)
 - Balance Sheet - Liability side
6. *Depreciation*
 - Profit and Loss Account - Debit side
 - Balance Sheet - Liability side
 - (Subtract from respective Assets)
7. *Interest on Capital*
 - Profit and Loss Account - Debit side
 - Balance Sheet - Liability side (Add the capital)
8. *Interest on Drawings*
 - Profit and Loss Account - Credit side
 - Balance Sheet - Liability side
 - (Subtract from the capital)
9. *Interest on Loan*
 - Profit and Loss Account - Debit side
 - Balance Sheet - Liability side
 - (Add with the respective loan)
10. *Bad Debts*
 - Profit and Loss Account - Debit side
 - Balance Sheet - Asset side
 - (Subtract from the sundry debtors)

Notes

Notes

11. *Provision for Bad and Doubtful Debts*

Regarding the Bad debts and provision for Bad and doubtful debts we have to apply the following formula.

$$BD + NR - OR$$

BD: It refers to the bad debts. It should be given either Trial Balance or Adjustments or both. The value of bad debts is transferred to formula for calculation. The calculated value should be transferred either to debit side or credit side of the P & L A/c.

Bad Debts (Adjustment)

Treatment:

(i) B/S Asset side [Subtract from Debtors], (ii) Transfer to formula [P & L A/c]

NR: It refers to New Reserve. Normally, it should be given in the adjustment, in the name of provision for doubtful debts or reserves on debtors and so on.

Treatment:

(i) Transfer to formula, (ii) Balance Sheet : Asset side (Subtract from the Debtors) **OR:** It represents old reserve. Normally, bad debts provision, i.e. old reserve is given in the Trial Balance. The treatment is that it should be transferred to the formula for calculating new bad debts provision.

After finding the value, to apply the formula it should be transferred to P & L A/c either debit side or credit side.

12. *Provision for Discount on Debtors*

- Profit & Loss Accounts Debit Side
- Balance Sheet Asset side [Deduct from sundry debtors]

13. *Provision for Discount on Creditors*

- Profit & Loss Accounts Credit Side
- Balance Sheet Liability Side [Deduct from sundry creditors]

14. *Goods Distributed as free of samples*

- Trading Accounts Debit Side [Deduct Purchases]
- Profit & Loss Accounts Debit Side (treated as advertisement expenditure).

15. *Loss of Stock by fire*

(a) **If Insurance Company admitted the full claim**

- Trading Account credit side (Total stock value destroyed by fire)
- Balance Sheet Asset side (Insurance Company Accounts)

(b) **If Insurance Company admitted the part of the claim: (for example 60%)**

- Trading Account credit side (Total stock value destroyed by fire) (100%)
- Profit and Loss Account Debit side (Loss by Fire) (40%)
- Balance Sheet Asset side (Insurance Company Account) (60%)

16. Managers' Commission

Preparation of Final
Accounts

In an organisation earn higher amount of profit it may given at certain percentage of commission on the net profit to their manager. It may calculated as follows:

$$\text{Commission Payable} = \frac{\% \text{ of Commission}}{100 + \text{Rate of Commission}} \times \text{Residual Profit}$$

Treatment:

- Profit and Loss Account Debit Side.
- Balance Sheet Liabilities Side.

Notes

Illustration 5: The following figures are available relating to the business of Shri Vel for the year 2019.

	₹
Opening stock	25,000
Purchases	92,000
Direct expenses	4,000
Closing stock	29,600
Sales	1,38,000

Calculate (i) Cost of goods sold and (ii) Gross Profit.

Solution:

- (i) Cost of goods sold = Opening Stock + Purchases + Direct Expen – Closing Stock
 = ₹ 25,000 + 92,000 + 4,000 – 29,600
 = ₹ 91,400
- (ii) Gross Profit = Sales – Cost of goods sold
 = 1,38,000 – 91,400
 = ₹ 46,600

Illustration 6: Prepare Trading Account from the following Balances:

	₹
Opening stock	80,000
Purchases	3,00,000
Sales	4,50,000
Purchase Returns	10,000
Sales Returns	20,000
Wages	5,000
Carriage & Freight	15,000
Freight on Purchases	12,000

Solution :**Trading Account****Dr.****Cr.****Notes**

Particulars	Amount (₹)	Amount (₹)	Particulars	Amount (₹)	Amount (₹)
To Opening Stock		80,000	By Sales	4,50,000	
To Purchases	3,00,000		Less : Sales Returns	20,000	4,30,000
Less: Purchase Returns	10,000	2,90,000			
To Wages		5,000			
To Carriage & Freight		15,000			
To Freight on Purchase		12,000			
To Gross Profit		28,000			
		4,30,000			4,30,000

Illustration 7: From the following balances extracted at the close of trading period ended on 31.3.2019, prepare Profit and Loss Account as on that date.

	₹		₹
Gross Profit	90,000	Discount Dr	1,000
Carriage Outward	5,000	Apprentice Premium (Cr)	3,000
Salaries	11,000	Advertisement	1,000
Rent & Taxes	4,000	Travelling Expenses	750
Fire Insurance Premium	3,000	Sundry Trade Expenses	500
Bad Debts	2,500		

Solution :**Profit and Loss Account****Dr.****Cr.**

Particulars	Amount (₹)	Amount (₹)	Particulars	Amount (₹)	Amount (₹)
To Carriage outwards		5,000	By Gross Profit		90,000
To Salaries		11,000	By Apprentice Premium		3,000
To Rent & Taxes		4,000			
To Fire Insurance Premium		3,000			
To Bad Debts		2,500			
To Discount		1,000			
To Travelling Expenses		750			
To Sundry Trade Expenses		500			
To Advertisement		1,000			
To Net Profit		64,250			
		93,000			93,000

Illustration 8: From the following Trial balances of Mr. Gagunath for the year ending on 31.12.2019, prepare Final Accounts with the closing stock of ₹ 15,000.

Preparation of Final Accounts

Particulars	Debit ₹	Credit ₹
Stock (1.1.2019)	46,800	-
Returns Inwards	10,000	-
Purchases	2,40,000	-
Rents & Rates	4,000	-
Sales	-	3,21,900
Debenture	-	25,000
Reserve Fund	-	45,000
Sundry Debtors	60,000	-
Salaries	3,000	-
Commission Received	-	4,900
Bad Debts	2,000	-
Bad Debts Provision	-	6,000
Wages	6,000	-
Return Outwards	-	2,000
Bills Receivable	25,000	-
Investments	60,000	-
Sundry Creditors	-	20,000
Bank Overdraft	-	5,000
Cash in Hand	11,000	-
Goodwill	26,000	-
Capital	-	63,000
Furniture	15,000	-
General Expenses	2,000	-
Discount (cr)	-	18,000
	<u>5,10,800</u>	<u>5,10,800</u>

Notes

Solution:

Trading Account for the year ended 31.12.2019

Particulars	Amount (₹)	Amount (₹)	Particulars	Amount (₹)	Amount (₹)
To Opening Stock		46,000	By Sales		3,21,900
To Purchases	2,40,000		Less: Sales Returns		10,000
Less: Return Outwards	2,000	2,38,000			3,11,900
To Wages		6,000	By Closing Stock		15,000
To Gross Profit		36,100			
		<u>3,26,900</u>			<u>3,26,900</u>

Profit and Loss Account for the year ended 31.12.2019

Notes

Particulars	Amount (₹)	Amount (₹)	Particulars	Amount (₹)	Amount (₹)
To Rent & Rates		4,000	By Gross Profit		36,100
To Salaries		3,000	By Commission		
To Bad Debts		2,000	Received		4,900
To General Expenses		2,000	By Discount (Cr.)		18,000
To Net Profit.		48,000			
		59,000			59,000

Balance Sheet as on 31.12.2019

Liabilities	Amount (₹)	Amount (₹)	Assets	Amount (₹)	Amount (₹)
Capital		63,000	Sundry Debtors		60,000
Debenture		25,000	Bills Receivable		25,000
Reserve Fund		45,000	Investments		60,000
Bad Debts Provision		6,000	Cash in Hand		11,000
Sundry Creditors		20,000	Goodwill		26,000
Bank Overdraft		5,000	Furniture		15,000
Profit Loss A/c		48,000	Closing Stock		15,000
		2,12,000			2,12,000

Illustration 9: The following balances are drawn from the books of M/s Arvind Mills as on 31.12.2019.

Account	Amount ₹
Land	1,00,000
Building	2,00,000
Sales	3,00,000
Purchases.....	1,75,000
Sales Returns	10,000
Purchase Returns	5,000
Stock (1.1.97)	25,000
Debtors	50,000
Bank overdraft	15,200
Cash on Hand	5,000
Creditors	20,000
Salaries	10,000
Wages	12,000
Goodwill	15,000
General Expenses	5,000

Selling Expenses	12,000
Bad Debts	1,000
Insurance	1,200
Capital	2,81,000

Preparation of Final
Accounts

Notes

The following adjustments are to be made:

- Closing stock is ₹ 30,000.
- Provide depreciation at the rate of 10% on buildings.
- Write off further bad debts ₹ 1,000.
- Salaries yet to be paid ₹ 3,000.
- Insurance prepaid ₹ 300.

You are required to prepare a Trading and Profit and Loss account and Balance Sheet of M/s Arvind Mills.

Solution:

Trading Account of M/s. Arvind Mills for the year ended 31.12.2019

Particulars	Amount (₹)	Amount (₹)	Particulars	Amount (₹)	Amount (₹)
To Opening Stock		25,000	By Sales		3,00,000
To Purchases	1,75,000		(-) Sales Returns		10,000
(-) Purchase Returns	5,000	1,70,000			2,90,000
To Wages		12,000	By Closing Stock		30,000
To Gross Profit		1,13,000			3,20,000
		3,20,000			

Profit and Loss Account of M/s. Arvind Mills for the year ended 31.12.2019

Particulars	Amount (₹)	Amount (₹)	Particulars	Amount (₹)	Amount (₹)
To Salaries	10,000		By Gross Profit		1,13,000
(+) Outstanding	3,000	13,000			
To General Expenses		5,000			
To Selling Expenses		12,000			
To Bad Debts (1000 + 1000)		2,000			
To Insurance	1,200				
(-) Prepaid	300	900			
To Depreciation on Building 10%		20,000			
To Net Profit		60,100			
		1,13,000			1,13,000

Balance Sheet of M/s. Arvind Mills as on 31.12.2019

Notes

Particulars	Amount (₹)	Amount (₹)	Particulars	Amount (₹)	Amount (₹)
Capital	2,81,000		Cash on Hand		5,000
(+) Net Profit	60,100	3,41,100	Land		1,00,000
Bank Overdraft		15,200	Building	2,00,000	
Creditors		20,000	(-) Depreciation	20,000	1,80,000
Outstanding Salary		3,000	Debtors	50,000	
			(-) Further Bad debts	1,000	49,000
			Goodwill		15,000
			Closing Stock		30,000
			Prepaid Insurance		300
		3,79,300			3,79,300

Illustration 10: From the following Trial Balance and given information, you are requested to prepare Final Account for the year ended on 31.12.2019.

Dr.	(₹)	Dr.	(₹)
Purchases	11,870	Capital	8,000
Debtors	7,580	Bad Debts recovered	250
Return Inwards	450	Creditors	1,250
Bank Deposit	2,750	Return Outwards	350
Rent	360	Bank Overdraft	1,570
Salaries	850	Sales	14,690
Travelling Expenses	300	Bills Payable	1,350
Cash	210		
Stock	2,450		
Discount allowed	40		
Drawings	600		
	<u>27,460</u>		<u>27,460</u>

The following adjustments are to be made:

- The closing stock on 31.12.2019 was ₹ 4,200.
- Write off ₹ 80 as bad debts and create a reserve for bad debts at 5% on sundry debtors.
- Three months rent is outstanding.
- Interest on Bank deposit ₹ 135 credited by the bankers and interest on overdraft ₹ 157 debited by them in the pass book have not been entered in the books.

Solution:

Trading Account for the year ended 31.12.2019

Particulars	Amount (₹)	Amount (₹)	Particulars	Amount (₹)	Amount (₹)
To Opening Stock		2,450	By Sales	14,690	

To Purchases	11870		Less : Sales Returns	450	14,240
Less: Return Outwards	350	11,520			
			By Closing Stock		4,200
To Gross Profit		4,470			
		18,440			18,440

Preparation of Final
Accounts

Notes

Profit and Loss Account for the year ended 31.12.2019

Particulars	Amount (₹)	Amount (₹)	Particulars	Amount (₹)	Amount (₹)
To Rent	360		By Gross Profit		4,470
(+) Outstanding (3x30)	90	450	By Bad Debts Recovered		250
To Salaries		850	By Interest on Bank Deposit		135
To Travelling Expenses		300			
To Discount Allowed		40			
To Bad Debts & Provisions (80 + 375)		455			
To Interest on Overdraft		157			
To Net Profit		2,603			
		4,855			4,855

Balance Sheet as on 31.12.2019

Liabilities	Amount (₹)	Amount (₹)	Liabilities	Amount (₹)	Amount (₹)
Capital	8,000		Cash		210
(-) Drawings	600		Debtors	7,580	
	7,400		(-) Bad Debts	80	
(+) Net Profit	2,603	10,003	(-) New Reserve	375	7,125
Creditors		1,250	Bank Deposit	2,750	
Bank Overdraft	1,570		+ Outstanding Interest	135	2,885
+ Interest Outstanding	157	1,727	Closing Stock		4,200
Bills Payable		1,350			
Rent Outstanding		90			
		14,420			14,420

Note for bad debts:

Drs:

7,580

(-) Bad Debts

80

BD + NR – OR

7,500

(-) NR (7500 × 5/100)

375

80 + 375 – 0 = 455

7,125

Illustration 11: Following are the balances extracted from the books of Mohammad as on 31st December 2019. Prepare Final Account as on the date.

Notes

	₹		₹
Capital	20,000	Drawings	5,000
Cash in Hand	5,000	Cash at Bank	8,000
Buildings	20,000	Machinery	6,000
Stock on 01.01.2019	3,000	Sundry Debtors	8,000
Sundry Creditors	6,000	Repairs	400
Commission paid	700	Wages	1,700
Rent and Rates	300	Insurance Premium	300
Purchases	60,000	Sales	96,000
Purchases Returns	750	Sales Returns	400
Furniture & Fixtures	1,600	Carriage	200
Loan To Ram	1,000	Telephone Charges	250
Discount allowed	50	Salaries	600
Bad Debts	350	Discount earned	100

Solution:

Trading-Account of Mr. Mohammad for the year ended 31.12.2019

Particulars	Amount- (₹)	Amount (₹)	Particulars	Amount (₹)	Amount (₹)
To Opening Stock		3,000	By Sales	96,000	
To Purchases	60,000		(-) Sales Returns	400	96,600
(-) Purchase Returns	750	59,250			
To Wages		1,700			
To Carriage		200			
To Gross Profit		31,450			
		95,600			95,600

Profit and Loss Account of Mr. Mohammad for the year ended 31.12.2019

Particulars	Amount (₹)	Amount (₹)	Particulars	Amount (₹)	Amount (₹)
To Repairs		400	By Gross Profit		31,450
To Commission paid		700	By Discount earned		100
To Rent & Rates		300			
To Discount allowed		50			
To Bad Debts		350			
To Insurance Premium		300			
To Telephone Charges		250			
To Salaries		600			
To Net Profit		28,600			
		31,550			31,550

Balance Sheet of Mr. Mohammad as on 31.12.2019

Preparation of Final
Accounts

Particulars	Amount (₹)	Amount (₹)	Particulars	Amount (₹)	Amount (₹)
Capital	20,000		Cash on Hand		5,000
(-) Drawings	5,000	15,000	Cash at Bank		8,000
			Building		20,000
Sundry Creditors		6,000	Machinery		6,000
Net Profit		28,600	Sundry Debtors		8,000
(Profit & Loss A/c)			Furniture Fixtures		1,600
			Loan to Ram		1,000
		49,600			49,600

Notes

Illustration 12: From the following Trial Balance extracted from the books of a merchant on 31.12.2019

	₹		₹
Furniture and Fittings	640	Purchases	5,475
Motor vehicles	6,250	Sales	15,450
Buildings	7,500	Bank Overdraft	2,850
Capital Account	12,500	Sales Returns	200
Provision for Bad Debts	20	Purchase Returns	125
Bad debts	125	Advertising	450
Sundry debtors	3,800	Interest A/c (Dr.)	118
Sundry Creditors	2,680	Commission (Cr.)	375
Stock on 1.1.1998	3,460	Cash	650
General Insurance	782	Taxes & Insurance	1,250
Salaries	3,300		

The following adjustments are to be made:

- Closing stock was valued at ₹ 3250.
- Depreciate building @ 5%, furniture and fitting @ 10% and motor vehicle @ 20%.
- ₹ 85 is due for interest on Bank overdraft.
- Salaries ₹ 300 and Taxes ₹ 120 are outstanding.
- Insurance amounting to ₹ 100 is prepaid.
- One-third of the commission received is in respect of work to be done next year.
- Write off further ₹ 100 as Bad debt and provision for bad debts is to be made equal to 5% on Sundry Debtors.

Prepare Final Account for the year ended 31.12.2019.

Solution:

Trading Account for the year ended 31.12.2019

Notes

Particulars	Amount (₹)	Amount (₹)	Particulars	Amount (₹)	Amount (₹)
To Opening Stock		3,460	By Sales	15,450	
To Purchases	5,475		(-) Sales Returns	200	15,250
(-) Purchase Returns	125	5,350			
To Gross Profit		9,690	By Closing Stock		3,250
		18,500			18,500

Profit and Loss Account for the year ended 31.12.2019

Particulars	Amount (₹)	Amount (₹)	Particulars	Amount (₹)	Amount (₹)
To Salaries	3,300		By Gross Profit		9,690
(+) Outstanding	300	3,600	By Commission	375	
To Insurance	782		(-) Received in Advance	125	250
(-) Prepaid	100	682			
To Advertising		450			
To Bad Debts Provisions		390			
To Interest	118				
(+) Outstanding	85	203			
To Taxes & Insurance	1,250				
(+) Outstanding	120	1,370			
To Depreciation:					
Building		375			
Furniture & Fittings		64			
Motor Vehicle		1,250			
Net Profit		1,556			
		9,940			9,940

Balance Sheet as on 31.12.2019

Liabilities	Amount (₹)	Amount (₹)	Liabilities	Amount (₹)	Amount (₹)
Capital	12,500		Cash		650
(+) Net Profit	1,556	14,056	Furniture & Fittings	640	
Sundry Creditors		2,680	(-) Depreciation	64	576
Bank Overdraft	2,850		Motor Vehicles	6,250	
(+) Interest Due	85	2,935	(-) Depreciation	1,250	5,000
			Buildings	7,500	
Outstanding Salary		300	(-) Depreciation	375	7,125
Outstanding Taxes			Sundry Debtors	3,800	

Insurance		120	(-) Bad Debts	100	
Commission received				3,700	
In advance		125	(-) Provision	185	3,515
			Closing Stock		3,250
			Prepaid Insurance		100
		20,216			20,216

Preparation of Final
Accounts

Notes

NOTE: BD + NR – OR = 225 + 185 – 20 = 390.

Illustration 13: From the following balance, prepare Final Account of Mr. Kumar for the year ended on 31.12.2019.

	₹	₹
Capital Account		60,000
Plant & Machinery	18,000	
Depreciation on Plant & Machinery	2,000	
Repair to Plant	1,600	
Wages	28,000	
Salaries	4,000	
Income Tax	500	
Cash in Hand	2,000	
Furniture	24,500	
Depreciation on Motorcar	2,500	
Purchase Less Returns (Adjusted)	93,500	
Sales		2,49,000
Bank Overdraft		13,800
Accrued Income	1,500	
Salaries Outstanding		2,000
Bills Receivable	30,000	
Bills payable		3,000
Provisions for Bad debts		6,000
Bad Debts	1,000	
Discount on Purchases		4,000
Sundry Debtors	35,000	
Sundry Creditors		23,300
Stock on Hand 01.01.2019	37,000	
Motorcar	50,000	
Stock on 31.12.2019	30,000	
	<u>3,61,100</u>	<u>3,61,100</u>

Write off ₹ 3,000 as bad debts and maintain a provision for bad debts at 5% Sundry Debtors.

Solution: Trading Account of Mr. Kumar for the year ended 31.12.2019

Notes

Particulars	Amount (₹)	Amount (₹)	Particulars	Amount (₹)	Amount (₹)
To Opening Stock		37,000	By Sales		2,49,000
To Purchases (Adjusted)	93,500				
(-) Discount on Purchases	4,000	89,500			
To Wages		28,000			
To Gross Profit		94,500			
		2,49,000			2,49,000

Profit and Loss Account of Mr. Kumar for the year ended 31.12.2019

Particulars	Amount (₹)	Amount (₹)	Particulars	Amount (₹)	Amount (₹)
To Depreciation on Plant & Machinery		2,000	By Gross Profit		94,500
To Repairs		1,600	By Bad Debts & Provisions		400
To Salaries		4,000			
To Depreciation on MotorCar		2,500			
To Net Profit		84,800			
		94,900			94,900

Balance Sheet of as on 31.12.2019

Liabilities	Amount (₹)	Amount (₹)	Liabilities	Amount (₹)	Amount (₹)
Capital Account	60,000		Plant & Machinery		18,000
(-) Income Tax	500	59,500	Cash in Hand		2,000
Bank Overdraft		13,800	Furniture		24,500
			Accrued Income		1,500
Salaries Outstanding		2,000	Bills receivable		30,000
Bills Payable		3,000	Sundry Debtors	35,000	
Sundry Creditors		23,300	(-) Bad debts	3,000	
Profit & Loss Account		84,800		32,000	
			(-) New Reserve	1,600	30,400
			Motor Car		50,000
			Closing Stock		30,000
		1,86,400			1,86,400

NOTE :

BD + NR – OR	Debtors	35,000
1,000		
+		
3,000		
+ 1,600 – 6,000 = – 400 (–), Bad Debts		3,000
= 5,600 – 6,000 = – 400		32,000
New Reserve = $32,000 \times \frac{5}{100} = 1,600$.		

Notes

Illustration 14: From the following balance extracted from the books of Shri Madhavan, prepare Final accounts for the year ended on 30th Sep. 2020 and a Balance Sheet as on that date.

	₹		₹
Drawings	6,480	Cash in Hand	850
Land & Building	25,000	Cast at bank	13,000
Investments	30,000	Capital Account	1,20,000
Sundry Debtors	37,800	Bad Debts Provision	2,470
Plant & Machinery	14,270	Sales	91,230
Furniture & Fixtures	1,250	Discount Account	120
Carriage Inwards	4,370	Purchase Returns	8,460
Wages	21,470	Sundry Creditors	12,170
Salaries	4,670	Apprentice premium	500
Bank Charges	140	Sales Returns	1,760
Coal, Gas & Water	720		
Rates and Taxes	840		
Purchases	42,160		
Bills Receivable	1,270		
Trade Expenses	1,990		
Stock (01.10.2019)	26,420		
Fire Insurance	490		

The following adjustments are to be made:

- Charge Depreciation on land & building Account at 2½%, Plant and machinery at 10%, Furniture and fixtures at 10%.
- Make Provision of 5% on Sundry Debtors for Doubtful Debts.
- Carry forward the unexpired amounts for Fire Insurance of ₹ 125, Rates and Taxes ₹ 240 and Apprentice premium ₹ 400.
- Charge 5% Interest on capital and Interest on Drawings is ₹ 300/-.
- The value of stock as on 30.09.2019 was ₹ 29,390/-.
- Outstanding wages are ₹ 530.
- Interest on Investment ₹ 3,000 is accrued.

Solution:

Trading Account of Mr. Madhavan for the year ended 31.9.2019

Notes

Particulars	Amount (₹)	Amount (₹)	Particulars	Amount (₹)	Amount (₹)
To Opening Stock		26,420	By Sales	91,230	
To Purchases	42,160		(-) Sales Returns	1,760	89,470
(-) Purchase Returns	8,460	33,700	By Closing Stock		29,390
To Carriage inwards		4,370			
To Wages	21,470				
(+) Outstanding	530	22,000			
To Coal, Gas and Water		720			
To Gross Profit		31,650			
		1,18,860			1,18,860

Profit and Loss Account of Mr. Madhavan for the year ended 31.9.2019

Particulars	Amount (₹)	Amount (₹)	Particulars	Amount (₹)	Amount (₹)
To Salaries		4,670	By Gross Profit		31,650
To Bank Charges		140	By Discount		120
To Rate and Taxes	840		By Apprentice		
(-) Prepaid	240	600	Premium	500	
To Trade Expenses		1,990	(-) Received in		
To Fire Insurance	490		Advance	400	100
(-) Prepaid	125	365	By Bad Debts		
To Depreciation :			Provision	2,470	
Land & Building 2½%		625	(-) New Provision	1,890	580
Plant & Machinery 10%		1,427			
Furniture & Fixtures 10%		125	By Interest on		
To Interest on Capital		6,000	Drawings		300
To Net Profit			By Accrued interest		
(Transferred to Capital A/c)			Investments		3,000
		19,808			
		35,750			35,750

Balance Sheet of Mr. Madhavan as on 31.09.2019

Liabilities	Amount (₹)	Amount (₹)	Liabilities	Amount (₹)	Amount (₹)
Capital		1,20,000	Cash in Hand		850
(+) Net Profit		19,808	Cash at Bank		13,000
Interest on Capital		6,000	Bills Receivables		1,270
		1,45,808	Sundry Debtors	37,800	
(-) Drawings	6,480		(-) Provision for		
(+) Interest on			Bad Debts	1,890	35,910

Notes

Drawings	300	6,780	Investments		30,000
		1,39,028			
Sundry Creditors		12,170	Accrued Interest		3,000
Apprentice Premium			Prepaid Insurance		125
Received in Advance		400	Prepaid Rates & Taxes		240
Outstanding Wages		530	Land & Building	25,000	
			(-) Depreciation	625	24,375
			Plant & Machinery	14,270	
			(-) Depreciation	1,427	12,843
			Furniture & Fixtures	1,250	
			(-) Depreciation	125	1,125
			Closing Stock		29,390
		1,52,128			1,52,128

NOTE: $BD + NR - OR = 0 + 1890 - 2470 = - 580$.

Illustration 15: From the following Ledger Balances extracted at the close of trading year ended 31st March 2019. Prepare Trading and Profit and Loss account and Balance Sheet at that date, after giving effect to the under mentioned adjustments:

	₹		₹
Capital on 1-4-2018	50,000	Business Premises	55,000
Stock on 1-4-2018	8,000	Furniture and Fixtures	2,500
Purchase	20,000	Bills Receivable	3,500
Sales	80,000	Bills Payable	2,500
Return Inwards	1,500	Sundry Creditors	15,800
Return Outwards	400	Packing Machinery	4,500
Wages	6,900	Smith's Loan (Dr) @	
Advertisement	5,500	10% on 1-4-2018	5,000
Apprenticeship Premium	1,200	Investment	3,000
Interest on Smith's Loan	300	Cash in Hand	250
Proprietor's Withdrawals	3,000	Cash at Bank	3,500
Office Expenses	8,050	Sundry Debtors	20,000

Adjustments to be made for the current period are:

(1) Stock in hand at 31st March 2019 ₹ 7,000; (2) Apprenticeship premium is for three years, paid advance on 1st April, 2018; (3) Interest on Capital to be allowed at 5% for the year; (4) Interest on Drawings to be charged to him as ascertained for the year ₹ 80; (5) ₹ 5,000 out of the Advertisement expenses are to be carried forward; (6) Stock valued at ₹ 3,000 destroyed by the fire on 25-3-2019 but the insurance company admitted a claim of ₹ 2,000 only and paid it in April 2019; (7) The manager is entitled to a commission of 10% of the Net profit calculated after charging such commission; (8) Included in sales is an amount of ₹ 10,000 representing goods on "sales or return". The customer still having the right to return the goods. The goods

were invoiced charging a profit of 20% on sales; (9) The stock included material worth ₹ 1,000 for which bills had not been received and therefore, not yet accounted for.

Solution:

Notes

Trading and Profit and Loss Account For the year ended 31st March 2019

	Amount (₹)	Amount (₹)		Amount (₹)	Amount (₹)
To Opening Stock		8,000	By Sales	80,000	
To Purchases	20,000		Less: Sales Returns	1,500	
Less: Return	400			78,500	
	19,600		Less: Goods Sold on Return Basis	10,000	68,500
Add: Material not accounted for	1,000	20,600	By closing Stock	7,000	
To Wages		6,900	Add: Stock lying with customers sold on return basis	8,000	15,000
To Gross profit c/d		51,000	By Loss of Stock by Fire		3,000
		86,500			86,500
To Interest on capital		2,500	By Gross Profit b/d		51,000
To Advertisement	5,500		By Apprentice Premium	1,200	
Less: Carried Forward	5,000	500	Less: Received in Advance	800	400
To Loss of stock by fire		1,000	By Interest on Drawings		80
To Office expenses		8,050	By Interest on Smith's loan	300	
		12,050	Add: Accrued Interest	200	500
To Manager's commission 1/11 of ₹ 39,930 i.e., (51980-12,050)		3,630			
To Net profit transferred to capital account		36,300			
		51,980			51,980

Balance Sheet as on 31.04.2019

Liabilities	Amount (₹)	Amount (₹)	Assets	Amount (₹)	Amount (₹)
Sundry Creditors	15,800		Cash in Hand		250
Add: Purchase of Material not accounted for	1,000	16,800	Cash at Bank		3,500
Bills Payable		2,500	Investment		3,000
Apprentice Premium received in Advance		800	Sundry Debtors	20,000	
Manager's Commission due		3,630	Less: Goods sold on return basis	10,000	10,000
			Insurance Company A/c		2,000

Capital	50,000		Closing Stock (7,000 + 8,000)		15,000
Add: Interest	2,500		Bills Receivable		3,500
Add: Net profit	36,300		Smith's Loan	5,000	
	88,800		Add: Accrued Interest	200	5,200
Less : Drawings and Interest	3,080	85,720	Packing Machinery		4,500
			Furniture and Fittings		2,500
			Business Premises	625	55,000
			Advertisement (carried forward)		5,000
		1,09,450			1,09,450

Notes

3.12. Summary

- The scope and importance of accounting is to provide variable information about a business enterprise to those persons who are directly or indirectly interested in the progress, performance and financial position of the concern. Information is the basis for decision making in an organisation.
- Double entry system of book-keeping refers to particular transactions which are entered in two aspects. It is based on the dual aspect concept.
- Personal account any are those which are related to persons.
- Real Accounts are those accounts which can be related to a property,
- Nominal accounts are those which are related to the business expenses or losses and incomes or gains.
- Journal, therefore, means day-to-day transactions which are recorded in the books. It is in the form of debit and credit, and is maintained with the help of accounting rules. The process of recording the transactions in a journal is called journalising.
- Money earned by the concern due to rendering of services or sale of goods is called income.
- Expenses are those which can be incurred, *i.e.* amount paid for the purpose of purchasing of goods or those who render services in our organisation.
- Anything which possesses certain monetary value is called Assets.
- A Business organisation which is liable to pay a certain sum of money to the outsiders is called liabilities.
- Final Accounts are prepared at the end of the financial year or Accounting year. The purpose of preparing Final Accounts is to enable one to know the progress of the business, profit or loss and financial position of the firm at the right time.
- Trading Account is prepared to know the trading results or gross profit on trading of the business.
- Profit and Loss Account is prepared to find out the net profit or net loss of the business.
- A Balance Sheet is a statement which is prepared for the purpose of finding out the Assets and Liability position of the concern for the particular period.
- The ultimate aim of the Trading and Profit and Loss Account is to know the real Profit or Loss of the concern during a given period.

Notes

3.13. Review Questions

1. What is meant by Trading Account?
2. Explain the meaning of Profit and Loss Account.
3. What is meant Balance Sheet?
4. What is cash basis of Accounting?
5. What is Mixed System of Accounting?
6. Explain the meaning of Single Entry System of Book-keeping.
7. What is meant by Double Entry System of Book keeping?
8. What is Book-Keeping?
9. What are the classification of Accounts?
10. Explain the concept of accounting rules with suitable illustration.
11. Explain the concept of accounting cycle. Give its coverage.
12. What is meant by Trail Balance? Explain the objectives of Trail Balance.
13. What are the methods available for preparing Trail Balance ?
14. What is meant by Final Accounts. Explain the procedure for preparation of Final Accounts.
15. What is accounting equation? Illustrate its mechanism by imaginary figures to prove that the two side equations are always equal.
16. Discuss briefly the relationship of accounting with other subjects.
17. Describe accounting as an information system.
18. Describe briefly the role of accountant in a society.
19. What do you mean by Journal? Why is it called the book of original entry. Give the rules and advantages of Journalising.
20. What do you mean by a postings? How is posting made from the Journal to ledger? Explain with suitable examples.
21. Define a ledger. Why is known as the principal book of accounts. Also give its rules.
22. Distinguish between Trading, Profit and Loss A/c and Balance Sheet.
23. Why is closing stock valued at cost or market price whichever is lower?
24. Explain the concept of cost of goods sold.
25. What is Balance Sheet? Why is it prepared? Give a specimen of the Balance Sheet.
26. What are adjusting entries? Why are these necessary for preparing final accounts.
27. How is the account relating to provision for doubtful debts kept? What is the object of this account? What is the influence of actual bad debts on it. How is it shown in the Balance Sheet?
28. Discuss the various adjustment entries while preparing final accounts.
29. Prepare Trial Balance as on 31.03.2019 from the balances of Mr. Raju.

Notes

Cash in Hand	1,70,000
Building	1,60,000
Stock on 01.04.2018	70,000
Purchases	3,20,000
Sales Return	5,000
Commission Received.....	7,000
Interest on Drawings	5,000
Director's Fees	2,000
Carriage Inwards	4,000
Carriage Outwards	3,000
Wages	2,000
Salaries Wages	3,000
Investments	75,000
Sales	7,30,000
Preliminary Expenses	5,000
Sundry Creditors	60,000
Bills Payable	30,000
Insurance	2,500
Income from Investment	3,500
Printing & Advertisement	15,000
Bank Loan	40,000
Freight on Purchase	5,000
Furniture & Fittings	18,000
Drawings Accounts	5,500
Deposits	86,000
Sundry Debtors	90,000
Bills Receivables	35,000
Office Expenses.....	3,000
Motor Van	63,000
Loan on Mortgage	1,02,000
Interest on Loan	4,500
General Expenses	6,500
Dividend Received	2,500
Interest (Cr)	1,000

30. From the following Trial Balance of Mr. X, prepare the final accounts for the year ended on 31.12.2019.

Debit Balance	₹	Credit Balance	₹
Land and Building	50,000	Returns	2,500
Purchases	1,10,000	Discounts	1,200

Notes

Stock	40,000	Sales	2,05,000
Returns	1,500	Capital	1,15,000
Wages	10,000	Loan	15,000
Salaries	9,000	Commission	1,500
Office Expenses	2,400	Creditors	25,000
Carriage	3,200	Bills Payable	2,350
Discounts	750		
Bad Debts	1,200		
Insurance	1,500		
Machinery	50,000		
Furniture	10,000		
Bills Receivable	20,000		
Sundry Debtors	40,000		
Cash	6,000		
Office Equipment	12,000		
	<u>3,67,550</u>		<u>3,67,550</u>

The following adjustments are to be made :

- Closing stock ₹ 60,000.
- Outstanding wages ₹ 2,000 and Rent ₹ 3,000.
- Depreciate land and buildings at 5% . Machinery at 10% , office equipment and furniture by 10%.
- Provide Reserve at 21/2% on debtors.
- Insurance Prepaid ₹ 200.
- Calculate interest on capital at 5%.

31. From the following Trial Balance, prepare the Trading and Profit and Loss Account of Mr. Kumaran for the year ended December 31, 2019 and the Balance Sheet as on that date.

Particulars	Debit (₹)	Credit (₹)
Kumaran's Capital	—	4,000
Plant and Machinery	5,000	—
Office Furniture and Fittings	260	—
Stocks on January 1, 2019	4,800	—
Motor Van	1,200	—
Sundry Debtors	4,470	—
Cash in Hand	40	—
Cash at Bank	650	—
Wages	15,000	—
Salaries	1,400	—
Purchases	21,350	—
Sales	—	48,000
Bills Receivable	720	—

Bills Payable	—	560
Sundry Creditors	—	5,200
Returns Inwards	930	—
Provision for Doubtful Debts	—	250
Drawings	700	—
Return Outwards	—	550
Rent	600	—
Factory Lighting and Heating	80	—
Insurance	680	—
General Expenses	250	—
Bad Debts	200	—
Discount	650	420
	<u>58,980</u>	<u>58,980</u>

Notes

The following adjustments are to be made:

- Stock on December 31, 2019 ₹ 5,200.
- 3 months factory lighting and heating is due but not paid ₹ 30/-.
- 5% depreciation to be written off on furniture.
- Write off further bad debts ₹ 70.
- The provision for doubtful debts is to be increased to ₹ 300 and provision for discount on debtors be provided at 2%

32. From the following Trial Balance of Krishna Bros as on 31st December 2019, prepare Trading and Profit and Loss Account and a Balance sheet:

Credit Balance	₹
Capital	36,000
Creditors	8,720
Bills payable	2,528
Sales	78,182
Loan	12,000
Debit Balance	
Debtors	3,885
Salaries	4,000
Discount	1,000
Postage	273
Bad Debts	287
Interest	1,295
Insurance	417
Machinery	10,000
Stock on 1st January	9,945
Purchases	62,092

Notes

Wages	4,300
Buildings	23,780
Fixtures and Fittings	16,156
Closing Stock on 31st December 2019 was	14,300

33. The following balance has been extracted from the books of Mr. Ganesh on 31.12.2019.

	₹		₹
Capital	15,000	Loans Borrowed	20,000
Drawings	4,800	Stock (1.1.2019)	7,500
Machinery	20,000	Purchases	60,000
Furniture	1,500	Sales	90,000
Sundry Debtors	20,000	Office Rent	1,000
Sundry Creditors	12,900	Insurance	240
Interest (Dr.)	1,250	Discount allowed	1,000
Wages	10,000	Discount earned	500
Salaries	7,500	General Expenses	1,200
Carriage Inwards	500	Cash in Hand	150
Purchase Returns	1,000	Bank Balance	1,260
Sales Returns	1,500		

The following adjustments are to be made:

- Closing Stock ₹ 10,000.
 - Outstanding rent ₹ 100. Salaries ₹ 900.
 - Insurance prepaid ₹ 40 and Interest on loans outstanding ₹ 250.
 - Provide Depreciation 10% on machinery and 6% of furniture.
 - Prepare Trading account, Profit and Loss account and Balance Sheet for the year ending 31st December 2019.
34. From the following Balance of Mr. Raju for the year ended on 31.3.2019, prepare Final Account.

Capital	1,00,000
Drawings	18,000
Buildings	15,000
Furniture & Fittings	7,500
Motor Van	25,000
Loan from Hari @ 12% interest	15,000
Interest paid on above	900
Sales	1,00,000
Purchases	75,000

Opening Stock	25,000
Establishment Expenses	15,000
Wages	2,000
Insurance	1,000
Commission Received.....	4,500
Sundry Debtors	28,100
Bank Balance	20,000
Sundry Creditors	10,000
Interest (Cr)	3,000

*Preparation of Final
Accounts*

Notes

The following adjustments are to be made:

- The value of closing stock on 31.03.2019 was ₹ 32,000.
- Outstanding wages ₹ 500.
- Prepaid Insurance ₹ 300.
- Commission Received on advance ₹ 300.
- Allow Interest on capital @ 10%.
- Depreciate Building 2½ %, Furniture's fittings 10% , Motor Van 10%.
- Charge Interest on Drawings ₹ 500.
- Accrued Interest ₹ 500/-.

35. From the following data, prepare Trading, Profit and Loss Account and a Balance Sheet as on 31.3.2019.

	₹		₹
Drawings	10,000	Capital	30,000
Purchases	30,000	Purchase Returns	1,000
Sales Returns	5,000	Sales	60,000
Carriage Inwards	2,000	Wages Outstanding	2,000
Carriage outwards	3,000	Rent Received	1,000
Depreciation on Plant	4,000	Reserve for Doubtful Debts	1,000
Plant Account	20,000	Interest (Cr)	5,000
Wages and Salaries	3,000	Sundry Creditors	6,000
Bad Debts	2,000	Loans	38,000
Premises	20,000		
Stock 1.4.2018	25,000		
Interest	5,000		
Sundry Debtors	15,000		
	<u>1,44,000</u>		<u>1,44,000</u>

The following adjustments are to be made:

- Stock on 31.3.19 was ₹ 40,000. A fire broke out in the godown and

Notes

destroyed stock worth ₹ 5,000 Insurance company had accepted and paid the claim in full.

(b) Provide for bad debts at the rate of 10% and provide for discount on Debtors at the rate of 5% and on Creditors at the rate of 10%.

(c) Depreciate Buildings at the rate of 15% per annum.

(d) Rent Outstanding amounted to ₹ 1,000.

(e) Closing Stock includes samples worth ₹ 2,000.

(f) Provide Interest on Drawings at the rate of 10% and on Capital @ 5%.

36. From the following Trial Balance, prepare the Trading Account and Profit and Loss Account of Mr. Mugunthan for the year ended on 31.12.2019 and the Balance Sheet as on the date.

Trial Balance

Particulars	Debit	Credit
Debtors and Creditors	6,800	4,500
Purchases and Sales	6,200	19,500
Bills	450	300
Investment	3,000	
Bad Debts & Reserve	200	400
Returns	200	100
Loose Tools	1,000	—
Machinery	9,600	—
Furniture	400	—
Carriage Inwards	300	—
Opening Stock	3,400	—
Establishment Charges	250	—
Wages	2,500	—
Coal and Power	1,300	—
General Expenses	2,300	—
Rates and Taxes	2,500	—
Drawings	600	—
Depreciation	1,200	—
Cash in Hand	100	—
Discount	100	100
Bank Overdraft		2,500
Capital		15,000
	42,400	42,400

The following adjustments are to be considered:

(a) Closing Stock was valued at ₹ 3,500.

- (b) Coal unconsumed ₹ 200.
 (c) Maintain 5% reserve for Bad debts.
 (d) Liability for wages ₹ 300.

37. From the following Trial Balance of Mr. Subith prepare Profit and Loss A/c for the year 2019 and Balance Sheet as on 31-12-2019 after giving effect to the under mentioned adjustments.

Notes**Debit Balance:**

	₹		₹
Drawings	3,250	Bad Debts	400
Stock (1.1.2019)	17,445	Patents	500
Return Inwards	554	Cash	62
Carriage Inwards	1,240	Discount Allowed	330
Deposit with Anand Gupta	1,375	Wages	754
Carriage Outwards	725	Credit Balances:	
Loan to Ashok @ 5% giving on 1-1-2019	1,000	Capital	15,000
		Inbersst an Loan to Ashok	25
Rent	820	Rent Outstanding	130
Purchases	12,970	Creditors	3,000
Goodwill	1,730	Provision for Doubtful Debts	1,200
Advertisement Expenses	954	Sales	27,914
Debtors	4,000	Return	840

Adjustments :

(1) The Manager of Mr. Subith is entitled to Commission 10% of the Net Profit calculated after charging such commission. (2) Increase Bad Debts by ₹ 600. Make Provision for Doubtful Debts @ 10% and Provision for Discount on Debtors 5%. (3) Stock valued at ₹ 1,500 destroyed by Fire on 25.12.2019 but the Insurance Co. admitted a claim for ₹ 950 only and paid it in 2008. (4) ₹ 200 out of the Advertisement Expenses are to be carried forward to the next year. (5) The value of Closing Stock is ₹ 18,792.

Fund Flow Statement

Notes

Structure

- 4.1. Introduction
- 4.2. Meaning of Fund Flow Statement
- 4.3. Different Names of Fund Flow Statement
- 4.4. Managerial Uses of Fund Flow Statement
- 4.5. Limitations of Fund Flow Statement
- 4.6. Steps in Preparation of Fund Flow Statement
- 4.7. Summary
- 4.8. Review Questions

4.1. Introduction

The traditional concept of profit and loss account and balance sheet has a limited role to play in financial analysis. The profit and loss account reflects the results of the business operations for a specified period of time. It takes into account only the expenses incurred and income received during the accounting period. The balance sheet gives a summary of the assets and liabilities at a particular period of time. And at the same time, balance sheet does not explain the details about the movement of funds. In actual practice, a business concern receives funds from various sources and invested in various ways of investment. It is a continuous process. The ultimate aim of the financial management is to study and control these funds in order to maintain the solvency and financial soundness of the firm. For the purpose of complete study of sources and applications of funds over the accounting period, a separate statement is essential to find the periodical increase or decrease of such funds of an enterprise. This statement is called fund flow statement.

4.2. Meaning of Fund Flow Statement

The fund flow statement is a statement which reveals the methods by which the business has been financed and how it has used its funds between two balance sheet dates.

In the words of Foulke: "A statement of sources and application of funds is a technical device, designed to analyse the changes in the financial conditions of a business enterprise between two balance sheet dates."

4.3. Different Names of Fund Flow Statement

A statement of sources and application of funds

A statement of sources and uses of funds

Where Got and where Gone statement

Inflow-outflow of fund statement

Statement of funds supplied and applied; funds received and disbursed statement

4.4. Managerial Uses of Fund Flow Statement

Fund flow statement is an invaluable analytical tool for a financial manager for the purpose of evaluating the employment of funds by a firm and also to assess sources of such funds. Following are the important managerial uses of fund flow statement.

1. The foremost use of the fund flow statement is to explain the reasons for changes in the assets and liabilities between two balance sheet dates.
2. Fund flow statement gives details about the funds obtained and used in past. Based upon this detail, manager can take correct actions at appropriate times.
3. Fund flow statement acts as a control device when compared with budgeted figures. It also gives guidance to the finance manager for taking remedial action if there is any deviation.
4. It helps the management to formulate various financial policies, viz dividend, bonus, etc.
5. It gives guidance to the management with regard to working capital. Through fund flow statement, management can take proper steps for effective utilisation of surplus working capital or in case of inadequacy, suitable arrangement can be made for improving the working capital position.
6. It identifies the strong and weak financial areas of the firm.
7. It gives the answers for various financial intricate questions:
 - How much funds were generated?
 - How were the funds used?
8. Effective utilisation of available resources and scarce resources should be allocated according to the preferential needs.
9. With the help of the fund flow statement, financial and lending institutions can easily evaluate the credit worthiness and repaying capacity of the borrowing company.
10. It enables the management to reformulate the firm's financial activity on the basis of the statement.

4.5. Limitations of Fund Flow Statement

1. In the real sense, the fund flow statement lacks originality, because it is only a rearrangement of data given in financial statements.
2. It indicates only the past year's performance and is not for the future. Even to prepare projected fund flow statement, it cannot show much accuracy.

Notes

3. It cannot reveal continuous changes. Because, only any particular two years are taken into account for analysis purpose.
4. Fund flow statement is not a substitute for a financial statement. It gives only some informations about changes in working capital alone.

4.6. Steps in Preparation of Fund Flow Statement

- (i) Preparation of fund flow statement.
- (ii) Preparation of statement of changes in working capital.
- (iii) Preparation of adjusted profits and loss account (to find out fund from operation or fund lost in operation).
- (iv) Adjustment and their treatments.
- (v) Preparation of separate ledger.
- (vi) Treatment about the provision for taxation and proposed divider.

NOTE: Fund flow statement alone is a major part of the solution; remaining other things *i.e.*, working capital statement, P & L A/c, preparation of ledger, treatment of provision for taxation and proposed dividend, adjustment etc were supported to work the fund flow statement.

I. Preparation Fund Flow Statement

Here, we have to prepare the fund flow statement in the T Shape

I. Fund Flow Statement : (Specimen form)

Source of Funds	Amount (₹)	Applications of Funds	Amount (₹)
Issue of shares	XX	Redemption of redeemable	XX
Issue of debentures	XX	Preference shares	XX
Loan borrowed	XX	Redemption of debentures	XX
(Long term, medium term)		Repayment of loans	XX
Acceptance of deposits	XX	Repayment of deposits	XX
Sale of fixed assets	XX	Purchase of fixed assets	XX
Sale of investments (Long term)	XX	Purchase of long term	
		investments	XX
Decrease in working capital	XX	Payment of dividend	XX
(Transfer from working capital		Income tax paid	XX
statements)			
Fund from operation	XX	Increase in working capital	XX
(Transfer from P&L A/c		Fund loss in operation	XX
Working capital statement)		(Transfer from P&L A/c)	

II. Working Capital Statement

For the purpose of finding out increase or decrease in working capital, we have to prepare statement of changes in working capital.

$$[TCA - TCL = WC]$$

Particulars	Year I		Year II
Current Assets:			
Cash in hand	XX		XX
Cash at bank	XX		XX
Sundry debtors	XX		XX
Bills receivable	XX		XX
Marketable securities	XX		XX
Inventory	XX		XX
Prepaid expenses	XX		XX
Short-term investment	XX		XX
Accrued incomes	XX		XX
Total Current Assets (TCA) (A)	XX		XX
Current Liabilities:			
Sundry creditors	XX		XX
Bills payable	XX		XX
Outstanding expenses	XX		XX
Bank overdraft	XX		XX
Income received in advance	XX		XX
Short-term loans	XX		XX
Cash credit from bank	XX		XX
Provision for taxation	XX		XX
Proposed dividend	XX		XX
Provision against current assets	XX		XX
Provision for doubtful debts	XX		XX
Total Current Liabilities (TCL) (B)	XX		XX
Working Capital (A-B)	XX		XX
Increase of Decrease	XX		
[TAC – TCL = WC]			

Notes

After the computation of working capital, we have to find out the increase or decrease in working.

III. Fund from Operation: Fund from operation is found out by two methods

- (i) Statement method
- (ii) Accounting method

Normally, accounting method is easy and convenient. So, we have to adopt accounting method, i.e. profit and loss account is used to find out the fund from operation. Here, profit and loss account is prepared in a usual procedure.

Notes

Particulars	Amount (₹)	Particulars	Amount (₹)
To Goodwill written off	XX	By Balance b/d	XX
To Preliminary expenses written off	XX	By Profit on sale of fixed assets	XX
To Patents written off	XX		
To Depreciation	XX	By Interest sale of investment	XX
To Dividend paid	XX	By Any other non-operating incomes	XX
To Provision for taxation	XX		
To Loss on sale of fixed assets	XX	By Fund from operation	XX
To Discount on issue of shares	XX		
To Interim dividend paid	XX		
To Balance c/d	XX		
To Fund operation	XX		
	XX		XX

IV. Important adjustments and their treatments

All the adjustments appear in two places :

Adjustment	Treatment
1. Depreciation	— P & L. A/c debit side Respective asset A/c credit side
2. Dividend paid	— P & L. A/c debit side Fund flow statement Application side
3. Income tax paid	— Income tax A/c debit side Fund flow statement—Application side
4. Income tax provision	— P & L. A/c debit side Income tax A/c credit side
5. Loss on sale of fixed Assets	— P & L. A/c debit side Respective asset A/c credit side
6. Interim dividend paid	— P & L. A/c debit side Fund flow statement—Application side

V. Preparation of separate ledger A/c, if necessary, i.e. about the non-current (either Assets or Liability) items related information given in the adjustment means we have to prepare separate ledger. Balances from this ledger can be transferred to fund flow statement means we have to prepare a separate ledger. Balances from this ledger can be transferred to fund flow statement.

VI. Treatment about the provision for taxation and proposed dividend

Provision for taxation and proposed dividend taken as current liability means it should appear under working capital statement.

Sometimes, regarding the provision for taxation, information is given in the adjustment. So, it should be treated as non-current liability. Provision

for taxation taken as non-current liability means proposed dividend is also taken as a non-current liability.

(a) Treatment of provision for taxation

- (i) Income Tax provided given in the adjustment, we have to find the tax paid

P & L. A/c debit side

Income Tax A/c credit

(Balancing figure of taxation A/c is called tax paid and then it is transferred to Applications side)

- (ii) Income tax paid given in the adjustment, we have to find the income tax provision.

Fund flow statement – application side

Income tax A/c – debit side

(Balancing figure of taxation A/c is called tax provided and then it is transferred to P & L. A/c debit side)

(b) Treatment of proposed dividend

Whenever provision for taxation is treated as non-current liability, proposed dividend is also taken as non-current liability. At that time, the following rules will be applicable.

Last year amount – application side

Current year amount: profit & loss A/c debit side.

Notes

Illustrations and Solutions

Illustration 1: The following are the summarised Balance Sheets of M/s. Krishna Ltd. as on 31.12.2019 and 2020

Liabilities	2019 (₹)	2020 (₹)
10% Preference Shares	1,00,000	1,10,000
Equity Shares	2,20,000	2,50,000
Share Premium	20,000	26,000
Profit & Loss A/c	1,04,000	1,34,000
12% Debentures	70,00	64,000
Creditors	38,000	46,000
Bills Payable	5,000	4,000
Provision for tax	10,000	12,000
Dividend Payable	7,000	8,000
	<u>5,74,000</u>	<u>6,54,000</u>
Assets	2019 (₹)	2020 (₹)
Machinery	2,00,000	2,30,000
Buildings	1,50,000	1,76,000

Notes

Land	18,000	18,000
Cash	42,000	32,000
Debtors	38,000	38,000
Bills Receivable	42,000	62,000
Stock	84,000	98,000
	<u>5,74,000</u>	<u>6,54,000</u>

You are required to prepare a statement of sources and application of funds

Solution:

Fund Flow Statement

Particulars	Amount (₹)	Particulars	Amount (₹)
Issue of preference shares	10,000	Purchase of machinery	30,000
Issue of equity shares	30,000	Purchase of building	26,000
Share premium received	6,000	Increase in working capital	14,000
Fund from operation	30,000	Redemption of debenture	6,000
	<u>76,000</u>		<u>76,000</u>

Workings:

(i) Statement of changes in working capital

	2019 (₹)	2020 (₹)
<i>Current Assets:</i>		
Cash	42,000	32,000
Debtors	38,000	38,000
Bills receivables	42,000	62,000
Stock	84,000	98,000
Total current assets	<u>2,06,000</u>	<u>2,30,000</u>
<i>Current Liabilities:</i>		
Creditors	38,000	46,000
Bills payable	5,000	4,000
Provision for Tax	10,000	12,000
Dividend payable	7,000	8,000
Total current liabilities	<u>60,000</u>	<u>70,000</u>
Working capital	1,46,000	1,60,000

Increase in working capital: ₹ 14000 (1,46,000 – 1,60,000)

[Transfer to Fund Flow Statement]

(ii) Profit and Loss Account

To Balance b/d (Closing)	1,34,000	By Balance c/d (Opening)	1,04,000
		By Fund from operation	30,000
	<u>1,34,000</u>		<u>1,34,000</u>

Illustration 2: The following are the summarised Balance Sheets of X Ltd., as on 31 December 2018 and 2019.

Fund Flow Statement

	31 st Dec.		Assets	31 st Dec.	
	2018 (₹)	2019 (₹)		2018 (₹)	2019 (₹)
Liabilities					
Redeemable Preference Shares		10,000	Fixed Assets	41,000	40,000
Equity shares	40,000	40,000	Less: Depreciation	11,000	15,000
General Reserve	2,000	2,000			
Profit & loss A/c	1,000	1,200		30,000	25,000
Debentures	6,000	7,000	Debtors	20,000	24,000
Creditors	12,000	11,000	Stock	30,000	35,000
Provision for tax	3,000	4,200	Prepaid exp.	300	500
Proposed dividend	5,000	5,800	Cash	1,200	3,500
Bank overdraft	12,500	6,800			
	81,500	88,000		81,500	88,000

Notes

You are required to prepare:

1. A statement showing changes in the working capital
2. A statement of sources and application of funds.

Solution:

Fund Flow Statement

Source of Funds	(₹)	Application of Funds	(₹)
Issue of preference shares	10,000	Increase in working capital	16,200
Issue of debentures	1,000		
Sale of fixed assets	1,000		
Fund from operation	4,200		
	16,200		16,200

Workings: (i) Statement of changes in working capital

	2018 (₹)	2019 (₹)
Current Assets:		
Debtors	20,000	24,000
Stock	30,000	35,000
Prepaid expenses	300	500
Cash	1,200	3,500
Total Current Assets	51,500	63,000
Current Liabilities:		
Creditors	12,000	11,000

Notes

Provision for tax	3,000	4,200
Proposed dividend	5,000	5,800
Bank overdraft	12,500	6,800
Total current liabilities	32,500	27,800
Working capital	19,000	35,200
Increase in working capital	16,200	(19,000 – 35,200)

Hint: Provision for taxation and proposed dividend taken as current liabilities.

(ii) Profit and Loss Account

To Balance b/d	1,200	By Balance c/d	1,000
To Depreciation	4,000	By Fund from operation	4,200
	5,200		5,200

Illustration 3: Calculate fund from operation from the information given below as on 31.3.2019.

1. Net profit for the year ended 31.3.2000 ₹ 6,50,000.
2. Gain on sale of buildings ₹ 35,500.
3. Goodwill appears in the books at ₹ 1,80,000 out of that 10% has been written off during the year.
4. Old machinery worth ₹ 8,000 has been sold for ₹ 6,500 during the year.
5. ₹ 1,25,000 have been transferred to reserve fund.
6. Depreciation has been provided during the year on machinery and furniture at 20% whose value is ₹ 6,50,000.

Solution:

Calculation of Fund from Operation

	(₹)	(₹)
Net profit for the year ended 31.3.2019		6,50,000
Add: Non fund items: [P & L. A/c Debit side items]		
Goodwill written off	18,000	
(1,80,000 × 10/100)		
Loss on sale of machinery		
(8000 – 6500)	1,500	
Transferred to Reserve fund	1,25,000	
Depreciation		
(6,50,000 × 20/100)	1,30,000	
		2,74,500
		9,24,500
Less: Non-fund items [P & L A/c credit side items]		
Gain on sale of Buildings		35,500
Fund from operation		8,89,000

Illustration 4: From the following balance sheets of AMB Ltd. as on 31.12.2018 and 2019, prepare a schedule of changes in working capital and fund flow statement.

Fund Flow Statement

Balance Sheet

Liabilities	2018 (₹)	2019 (₹)
Share capital	1,00,000	1,00,000
General reserve	14,000	18,000
P & L A/c	16,000	13,000
Sundry creditors	8,000	5,400
Bills payable	1,200	800
Provision for tax	16,000	18,000
Provision for doubtful debts	400	600
	1,55,600	1,55,800

Assets	2018 (₹)	2019 (₹)
Goodwill	12,000	12,000
Buildings	40,000	36,000
Plant	37,000	36,000
Investments	10,000	11,000
Stock	30,000	23,400
Bills receivable	2,000	3,200
Debtors	18,000	19,000
Cash at bank	6,600	15,200
	1,55,600	1,55,800

Notes

The following additional information is also available:

1. Depreciation charges on Plant & Buildings at ₹4,000 each.
2. Provision for taxation of ₹19,000 was made during the year 2019.
3. Interim dividend of ₹ 8,000 was paid during the year 2019.

Solution:

Fund Flow Statement

Source of Funds	(₹)	Application of Funds	(₹)
Fund from operation	36,000	Increase in working capital	7,000
		Interim dividend paid	8,000
		Tax paid	17,000
		Purchase of plant	3,000
		Investments	1,000
	36,000		36,000

Notes

Workings: (i) Statement of changes in working capital

<i>Current Assets:</i>	2018	2019
Stock	30,000	23,400
Bills receivable	2,000	3,200
Debtors	18,000	19,000
Cash at Bank	6,600	15,200
Total current assets	56,600	60,800
<i>Current Liabilities:</i>		
Sundry creditors	8,000	5,400
Bills payable	1,200	800
Provision for Doubtful Debts	400	600
Total current liabilities	9,600	6,800
Working capital	47,000	54,000
Increase in working capital	(47,000 – 54,000)	7,000

(ii) Profit and Loss Account

To Balance c/d	13,000	By Balance b/d	16,000
To Depreciation on Buildings	4,000	By Fund from operation	36,000
To Depreciation on Plant	4,000		
To Income tax provided	19,000		
To Interim dividend paid	8,000		
To General reserve	4,000		
	52,000		52,000

(iii) Provision for Taxation Account

To Balance b/d	18,000	By Balance b/d	16,000
To Cash (Tax Paid)	17,000	By P & L A/c (Income Tax Provided)	19,000
	35,000		35,000

(iv) Building Account

To Balance b/d	40,000	By Balance b/d	36,000
		By Depreciation	4,000
	40,000		40,000

(v) Plant Account

To Balance b/d	37,000	By Balance b/d	36,000
To Cash (Purchase)	3,000	By Depreciation	4,000
	40,000		40,000

Illustration 5: From the following summarised financial statement of Anxious Ltd as on 30.04.2018, prepare

Fund Flow Statement

- (a) Statement of changes in working capital for the year ended 30.04.2018 and
(b) A statement showing sources and applications of funds during the same period.

Notes

Liabilities	2017 (₹)	2018 (₹)	Assets	2017 (₹)	2018 (₹)
Share capital	10,00,000	13,50,000	Fixed assets (Net)	18,00,000	20,50,000
General reserve	5,00,000	6,00,000	Investments	2,00,000	2,50,000
Profit & loss A/c	1,00,000	1,50,000	Inventories	5,00,000	7,00,000
Debentures	6,00,000	5,00,000	Debtors	5,85,000	6,40,000
Sundry creditors	9,00,000	10,50,000	Cash	15,000	10,000
	31,00,000	36,50,000		31,00,000	36,50,000

During the year ended on 30.04.2018 depreciation charged on fixed assets amounted to ₹2,50,000. The final dividend for the year ended 30.04.2017 amounted to ₹1,00,000 was paid on 08.01.2018.

Solution:

Fund Flow Statement

Source of funds	(₹)	Application of funds	(₹)
Issue of shares	3,50,000	Purchase of fixed assets	5,00,000
Fund from operation	5,00,000	Purchase of Investments	50,000
		Dividend paid	1,00,000
		Increase in working capital	1,00,000
		Redemption of debenture	1,00,000
	8,50,000		8,50,000

Workings: (i) Statement of changes in working capital

Current Assets:	2018 (₹)	2019 (₹)
Inventors	5,00,000	7,00,000
Debtors	5,85,000	6,40,000
Cash	15,000	10,000
Total current assets	11,00,000	13,50,000
Current Liabilities:		
Sundry creditors	9,00,000	10,50,000
Total current liabilities	9,00,000	10,50,000
Working capital	2,00,000	3,00,000
Increase in working capital	1,00,000	(2,00,000 – 3,00,000)

Notes

(ii) Profit and Loss Account

	(₹)		(₹)
To General reserve	1,00,000	By Balance b/d	1,00,000
To Dividend paid	1,00,000	By Fund from operation	5,00,000
To Depreciation	1,50,000		
To Balance c/d	2,50,000		
	6,00,000		6,00,000

(iii) Fixed Assets Account

To Balance b/d	18,00,000	By Depreciation	2,50,000
To Cash	5,00,000	By Balance c/d	20,50,000
	23,00,000		23,00,000

Illustration 6: From the following balance sheets of Kavin Ltd., prepare a statement of changes in working capital and fund flow statement for the year ended 31.3.2019.

Liabilities	2018 (₹)	2019 (₹)	Assets	2018 (₹)	2019 (₹)
Share capital	3,00,000	3,50,000	Goodwill	1,00,000	80,000
Debentures	1,50,000	2,50,000	Machinery	4,10,000	5,40,000
General reserve	1,00,000	1,50,000	Investment	30,000	80,000
Profit & loss A/c	60,000	70,000	Discount on		
Provision for			issue of		
depreciation on			Debentures	5,000	—
machinery	90,000	1,30,000	Cash at bank	1,20,000	1,30,000
Sundry creditors	75,000	1,10,000	Sundry debtors	80,000	1,90,000
Bills payable	10,000	15,000	Stock	40,000	55,000
	7,85,000	10,75,000		7,85,000	10,75,000

During the year investments costing ₹ 30,000 were sold for ₹ 28,000 and a new machine was purchased for ₹ 45,000. The payment was made in fully paid shares.

Solution:

Fund Flow Statement

Source of Funds	(₹)	Application of Funds	(₹)
Issue of Shares	5,000	Purchase of Machinery (4)	85,000
Issue of Debentures	1,00,000	Increase in Working Capital (1)	95,000
Sale of Investments	28,000	Purchase of Investment (6)	80,000
Fund from Operation	1,27,000		
	2,60,000		2,60,000

Workings: (i) Statement of changes in working capital*Fund Flow Statement*

<i>Current Assets:</i>	1999 (₹)	2000 (₹)
Cash at bank	1,20,000	1,30,000
Sundry Debtors	80,000	1,90,000
Stock	40,000	55,000
Total current assets	2,40,000	3,75,000
<i>Current Liabilities:</i>		
Sundry creditors	75,000	1,10,000
Bills payable	10,000	15,000
Total current liabilities	85,000	1,25,000
Working capital	1,55,000	2,50,000
Increase in working capital	95,000	(1,55,000 – 2,50,000)

Notes**(ii) Profit and Loss Account**

To Goodwill Written off	20,000	By Balance b/d	60,000
To General Reserve	50,000	By Fund from Operation	1,27,000
To Discount Issue of Debentures	5,000		
To Depreciation	40,000		
To Loss on Sale of Investments	2,000		
To Balance c/d	70,000		
	1,87,000		1,87,000

(iii) Share Capital Account

To Balance c/d	3,50,000	By Balance b/d	3,00,000
		By Machinery	45,000
		By Cash	5,000
	3,50,000		3,50,000

(iv) Machinery Account

To Balance b/d	4,10,000	By Balance c/d	5,40,000
To Shares	45,000		
To Cash (b/f)	85,000		
	5,40,000		5,40,000

(v) Provision for Depreciation on Machinery Account

To Balance c/d	20,000	By Balance b/d	90,000
To Purchase of Investment (b/f)	80,000	By Profit & Loss Account	40,000
	1,30,000		1,30,000

Notes

(vi) Investment Account

To Balance b/d	30,000	By Bank	28,000
To Purchase of Investment (b/f)	80,000	By Loss on Sale of Investment	2,000
		By Balance c/d	80,000
	1,10,000		1,10,000

NOTE: Sale of Investment

Cash A/c	Dr.	28,000	[Actual sale]
Profit & Loss A/c	Dr.	2,000	[Loss on sale]
To Investments		30,000	[Value of investment]

Illustration 7: From the following data of National Auto Ltd. for the year 2000 and 2001.

Particulars	2000 (₹)	2001 (₹)
Cash	2,000	2,500
Account receivable	2,400	2,700
Inventories	3,100	3,200
Other current assets	800	700
Fixed assets	5,000	5,800
Accumulated depreciation	2,100	2,500
Accounts payable	2,000	2,100
Long-term debt	1,400	1,300
Equity capital	5,000	5,300
Retained earnings	2,800	3,700

The following additional information is also available :

- Fixed assets costing ₹1,200 were purchased for cash.
- Fixed assets [Original cost of ₹400 accumulated depreciation ₹150] were sold for ₹ 200.
- Depreciation for the year 2001 amounted to ₹ 550 and duly debited to profit & loss account.
- Dividend paid amounted to ₹ 300 in 2001.
- Reported income for 2001 was ₹ 2,400.

Solution:

Fund Flow Statement

Source of Funds	(₹)	Application of Funds	(₹)
Issue of Equity Shares	300	Dividend paid	300
Sale of Fixed Assets	200	Purchase of Fixed Assets	1,200
Fund from Operation	1,800	Repayment of Long-term Debt	100
		Increase in Working Capital	700
	2,300		2,300

Workings: (i) Statement of changes in working capital

Fund Flow Statement

Current Assets:	2000 (₹)	2001 (₹)
Cash	2,000	2,500
Accounts receivable	2,400	2,700
Inventories	3,100	3,200
Other current assets	800	700
Total current assets	<u>8,300</u>	<u>9,100</u>
Current Liabilities:		
Account payable	<u>2,000</u>	<u>2,100</u>
Total current liabilities	<u>2,000</u>	<u>2,100</u>
Working capital	<u>6,300</u>	<u>7,000</u>
Increase in working capital	700	(6300 – 7000)

Notes

(ii) Fixed Assets Account

To Balance b/d	5,000	By Cash	200
To Cash	1,200	By Accumulated Depreciation	150
		By Profit & Loss A/c	50
		By Balance c/d	5,800
	<u>6,200</u>		<u>6,200</u>

(iii) Profit and Loss Account

To Fixed Assets	50	By Balance c/d	2,800
To Depreciation	550	By Fund from Operation	1,800
To Dividend paid	300		
To Balance c/d	3,700		
	<u>4,600</u>		<u>4,600</u>

(iv) Accumulated Depreciation Account

To Fixed Assets	150	By Balance b/d	2,100
To Balance c/d	2,500	By Profit & Loss A/c	550
	<u>2,650</u>		<u>2,650</u>

NOTE:**(i) Journal Entry for Ind Adjustment**

Cash A/c	Dr.	200	[Sale of fixed assets]
Accumulated depreciation A/c	Dr.	150	[Depreciation]
Profit and Loss A/c	Dr.	50	[Loss on sale]
To Fixed assets		400	

(ii) Reported income

It is included in the Retained Earnings. So, there is no need to give the effect of this Adjustment.

Illustration 8: Following are the summarised Balance Sheet of XYZ Ltd. As on 31st Dec. 2002 and 2003.

Notes

Liabilities	2002 (₹)	2003 (₹)	Assets	2002 (₹)	2003 (₹)
Share Capital	1,00,000	1,25,000	Land and Building	1,00,000	95,000
General Reserve	25,000	30,000	Machinery	75,000	84,500
Profit and Loss A/c	15,250	15,300	Stock	50,000	37,000
Bank Loan (long-term)	35,000	—	Debtors	40,000	32,100
Sundry Creditors	75,000	67,600	Cash	250	300
Provision for Taxation	15,000	17,500	Bank	—	4,000
			Goodwill	—	2,500
	2,65,250	2,55,400		2,65,250	2,55,400

Additional Information:

- (i) Dividend of ₹ 16,500/- was paid.
- (ii) Assets of another company were purchased for a consideration of ₹ 25,000/- payable in shares.

The following assets purchased

Stock 10,000

Machinery 12,500

- (iii) Machinery was further purchased for ₹ 4,000
- (iv) Depreciation written off on machinery ₹ 6,000
- (v) Income tax provided during the year ₹ 16,500/-
- (vi) Loss on sale of machinery ₹ 100/- was written off to General Reserve.

Prepare a statement of Funds Flow of XYZ Ltd.

Solution:

Fund Flow Statement

Source of funds	(₹)	Application of funds	(₹)
Sale of land and buildings	5,000	Repayment of bank loan	35,000
Funds from operation	44,150	Dividend paid	16,500
Sale of machinery	900	Purchase of machinery	4,000
Decrease in working capital	9,450	Income tax paid	14,000
Issue of shares for stock	10,000		
	69,500		69,500

Workings:**1. Statement of changes in working capital:**

<i>Current Assets:</i>	2002 (₹)	2003 (₹)	Notes
Stock	50,000	37,000	
Debtors	40,000	32,100	
Cash	250	300	
Bank	—	4,000	
Total current assets	90,250	73,400	
<i>Current Liabilities:</i>			
Sundry creditors	75,000	67,600	
Total current liabilities	75,000	67,600	
Working capital	15,250	5,800	
Decrease in working capital		9,450	

2. Share Capital A/c

	(₹)		(₹)
To Balance c/d	1,25,000	By Balance b/d	1,00,000
		By Stock	10,000
		By Machinery	12,500
		By Goodwill	2,500
	1,25,000		1,25,000

3. Profit and Loss A/c

	(₹)		(₹)
To Balance c/d	15,300	By Balance b/d	15,250
To Dividend paid	16,500	By FFO	44,150
To Depreciation (mach)	6,000		
To Income tax provision	16,500		
To General reserves	5,100		
	59,400		59,400

4. Provision for Taxation A/c

	(₹)		(₹)
To Balance c/d	17,500	By Balance b/d	15,000
To Cash (Tax paid)	14,000	By P & L A/c	16,500
	31,500		31,500

Notes

5.

Machinery A/c

	(₹)		(₹)
To Balance b/d	75,000	By Balance c/d	84,500
To Shares	12,500	By Profit and loss A/c	6,000
To Cash	4,000	By General reserve A/c	100
		By Cash	900
	91,500		91,500

6.

Goodwill A/c

	(₹)		(₹)
To Balance b/d	Nil	By Balance c/d	2,500
To Shares	2,500		
	2,500		2,500

7.

General Reserve A/c

	(₹)		(₹)
To Balance c/d	30,000	By Balance b/d	25,000
To Machinery	100	By Profit and loss A/c	5,100
	30,100		30,100

4.7. Summary

- The fund flow statement is a statement which reveals the methods by which the business has been financed and how it has used its funds between two balance sheet dates.
- "A statement of sources and application of funds is a technical device, designed to analyse the changes in the financial conditions of a business enterprise between two balance sheet dates."
- Fund flow statement is an invaluable analytical tool for a financial manager for the purpose of evaluating the employment of funds by a firm and also to assess sources of such funds.

4.8. Review Questions

1. What is meant by fund flow statement?
2. Describe the various steps involved in preparation of fund flow statement.
3. What do you mean by funds from operation?
4. Explain the basic objectives of compiling a statement of sources and Application of Funds.
5. Explain the advantages and limitations of fund flow statement.
6. From the following Balance Sheets, prepare schedule of changes in working capital.

Liabilities	Dec. 2018 (₹)	Dec. 2019 (₹)	Assets	Dec. 2018 (₹)	Dec. 2019 (₹)
Share capital	2,00,000	2,50,000	Cash	30,000	47,000
Creditors	70,000	45,000	Debtors	1,20,000	1,15,000
Retained } Earnings }	10,000	23,000	Land	50,000	66,000
	2,80,000	3,18,000	Stock	80,000	90,000
				2,80,000	3,18,000

Notes

7. From the following Balance Sheets, prepare a statement showing changes in working capital during 2019.

Balance sheet of Pioneer Ltd. as on 31st December.

Liabilities	2018 (₹)	2019 (₹)
Share capital	5,00,000	6,00,000
Reserves	1,50,000	1,80,000
P & L A/c	40,000	65,000
Debentures	3,00,000	2,50,000
Creditors for Goods	1,70,000	1,60,000
Provision for Income Tax	60,000	80,000
	12,20,000	13,35,000

Assets	2018 (₹)	2019 (₹)
Fixed assets	10,00,000	11,20,000
Less: Depreciation	3,70,000	4,60,000
	6,30,000	6,60,000
Stock	2,40,000	3,70,000
Book Debts	2,50,000	2,30,000
Cash in Hand and at Bank Balance	80,000	60,000
Preliminary Expenses	20,000	15,000
	12,20,000	13,35,000

8. From the following Balance Sheets of a sole trader, prepare a fund flow statement.

Liabilities	1999 (₹)	2000 (₹)	Assets	1999 (₹)	2000 (₹)
Capital	63,000	1,00,000	Cash	15,000	20,000
Long-term loans	50,000	60,000	Debtors	30,000	28,000

Notes

Trade creditors	42,000	39,000	Stock	55,000	72,000
Bank overdraft	35,000	25,000	Land & Building	80,000	1,00,000
Outstanding expenses	5,000	6,000	Furniture	15,000	10,000
	1,95,000	2,30,000		1,95,000	2,30,000

9. Following are the comparative Balance Sheets of a HAL company for the year 2018 and 2019.

Balance Sheet

Liabilities	2018 (₹)	2019 (₹)	Assets	2018 (₹)	2019 (₹)
Share capital	70,000	74,000	Cash	9,000	7,800
Debentures	12,000	6,000	Debtors	14,900	17,700
Creditors	10,360	11,840	Stock	49,200	42,700
Profit & loss A/c	10,740	11,360	Goodwill	10,000	5,000
			Land	20,000	30,000
	1,03,100	1,03,200		1,03,100	1,03,200

The following additional information is also available:

- (i) Dividends were paid totalling ₹ 4,000
- (ii) Land was purchased for ₹ 10,000. You are required to prepare fund flow statement.

10. From the following Balance Sheets of Exe Ltd. prepare

- (a) A statement of changes in working capital
- (b) A fund flow statement

Liabilities	2018 (₹)	2019 (₹)	Assets	2018 (₹)	2019 (₹)
Equity share capital	3,00,000	4,00,000	Goodwill	1,15,000	90,000
Redeemable preference share capital	1,50,000	1,00,000	Land & Building	2,00,000	1,70,000
General reserve	40,000	70,000	Plant	80,000	2,00,000
Profit & Loss A/c	30,000	48,000	Debtors	1,60,000	2,00,000
Proposed dividend	42,000	50,000	Stock	77,000	1,09,000
Creditors	55,000	83,000	Bills receivable	20,000	30,000
Bills payable	20,000	16,000	Cash in hand	15,000	10,000
Provision for taxation	40,000	50,000	Cash at bank	10,000	8,000
	6,77,000	8,17,000		6,77,000	8,17,000

The following additional information is also available:

- (a) Depreciation of ₹ 10,000 and ₹ 20,000 have been charged on plant and land buildings respectively in 2000.

(b) A dividend of ₹ 20,000 has been paid in 2000.

(c) Income tax of ₹ 35,000 has been paid during 2000.

11. The following are the summarised Balance Sheets of Lucky Ltd. as on 31.12.2018 and 2019.

Liabilities	2018 (₹)	2019 (₹)	Assets	2018 (₹)	2019 (₹)
Share capital	2,00,000	2,50,000	Land & Buildings	2,00,000	1,90,000
General reserve	50,000	60,000	Machinery	1,50,000	1,69,000
P & L A/c	30,500	30,600	Stock	1,00,000	74,000
Bank loan (Long-term)	70,000	—	Sundry debtors	80,000	64,200
Sundry creditors	1,50,000	1,35,200	Cash	500	600
Provision for taxation	30,000	35,000	Bank	—	8,000
			Goodwill	—	5,000
	5,30,500	5,10,800		5,30,500	5,10,800

Notes

Additional information supplied during the year ended 31.12.2019:

- (a) Dividend of ₹ 23,000 was paid.
 (b) Assets of another company were purchased for a consideration of ₹ 50,000 payable in shares.

The following assets were purchased:

Machinery ₹ 25,000; Stock ₹ 20,000.

- (c) Machinery was further purchased for ₹ 8,000.
 (d) Depreciation written off against machinery ₹ 12,000.
 (e) Income tax paid during the year ₹ 33,000.
 (f) Loss on sale of machinery ₹ 200 was written off to general reserve.
 (g) Depreciation charged against land & buildings was ₹ 10,000.

You are required to prepare fund flow statement.

12. From the following Balance Sheet you are required to prepare schedule of changes in working capital and fund flow statement.

Balance Sheet

Liabilities	31.3.2018 (₹)	31.3.2019 (₹)	Assets	31.3.2018 (₹)	31.3.2019 (₹)
Share capital	50,000	50,000	Cash	20,000	10,000
P & L A/c	80,000	1,10,000	Marketable securities	10,000	
12% debentures	—	30,000	Inventories	60,000	1,00,000
Sundry creditors	20,000	25,000	Debtors	30,000	40,000
Bills payable	20,000	5,000	Gross block	1,00,000	1,40,000
Other current liabilities	10,000	15,000	(-) accumulated depreciation	(40,000)	(55,000)
	1,80,000	2,35,000		1,80,000	2,35,000

13. From the following summarised Balance Sheets of Balaji & Co. as on 31.12.2003 and other information furnished, prepare fund flow statement.

Balance Sheet

Notes

Liabilities	2003 (₹)	2002 (₹)	Assets	2003 (₹)	2002 (₹)
Share capital	2,00,000	50,000	Fixed assets	4,20,000	2,40,000
Redeemable per shares	—	1,00,000	Investments	15,000	18,000
Profit & loss A/c	3,50,000	1,20,000	Stock	1,60,000	58,500
Debentures	—	1,25,000	Bills receivable	92,000	1,37,000
Sundry creditors	1,90,000	2,25,000	Cash at bank	1,20,000	1,85,000
Provision for Tax	75,000	25,000	Prepaid expenses	8,000	6,500
	8,15,000	6,45,000		8,15,000	6,45,000

The following additional information is also available:

- On 31.12.2003 accumulated depreciation on fixed assets amounted to ₹ 1,20,000 and on 31st December 2002 ₹ 1,10,000.
- Machinery costing ₹ 10,000 (accumulated depreciation thereon being ₹ 5,000) was discarded and written off during 2003.
- Depreciation written off during 2003 amounted to ₹ 15,000.
- During the year 2003 investments costing ₹ 6,000 were sold for ₹ 7,000.
- Dividend paid during the year was ₹ 45,000.
- Redeemable preference shares were redeemed out of profits during the year at a premium of 5%.

14. From the following information, calculate funds from operations.

Profit and Loss Account

Particulars	(₹)		(₹)
To Operating expenses	1,00,000	By Gross profit	2,00,000
To Depreciation	40,000	By Gain on sale of building	20,000
To loss on sale of machinery	10,000		
To advertisement expenses A/c	5,000		
To discount of debtors	500		
To discount on issue a shares	500		
To goodwill written off	12,000		
To preliminary expenses written off	2,000		
To Net profit	50,000		
	2,20,000		2,20,000

15. The Balance Sheets of Dharan Ltd. as on 31.12.1999 and 31.12.2000 are as follows.

Fund Flow Statement

Liabilities	1999 (₹)	2000 (₹)	Assets	1999 (₹)	2000 (₹)
Share capital	2,00,000	2,50,000	Fixed assets	3,50,000	4,75,000
Retained earnings	1,60,000	3,00,000	Inventory	1,00,000	95,000
Premium on share	—	5,000	Accounts receivable	43,000	50,000
Accumulated depreciation	80,000	60,000	Prepaid expenses	4,000	5,000
Debentures	60,000	—	Cash	15,800	10,200
Bank overdraft	37,800	40,200	Commission on shares	25,000	20,000
	5,37,800	6,55,200		5,37,800	6,55,200

Notes

The following additional information is also available:

- Net profit for the year ₹ 1,40,000
- Income tax was paid ₹ 40,000
- Interim dividend paid during the year was ₹ 20,000.
- An addition to the fixed asset was made during the year at a cost of ₹ 1,65,000 and fully depreciated machinery costing ₹ 40,000 was discarded, no salvage being realised.
- Depreciation for the year ₹ 20,000

Cash Flow Statement

Notes

Structure

- 5.1. Introduction
- 5.2. Limitations of Cash Flow Analysis
- 5.3. Difference between Cash Flow Analysis and Fund Flow Analysis
- 5.4. Steps in Preparation of Cash Flow Statement
- 5.5. Summary
- 5.6. Review Questions

5.1. Introduction

Cash contributes significant role in the entire economic activities of the business world. And at the same time, cash is not only essential for business, but is also essential for each and every activity of human life. What blood is to human body, cash is to a business firm. The firm receives cash from various sources like issue of shares, sale of assets, etc. It needs cash to make payments for various purposes like payment to suppliers and to meet out the day-to-day expenses. The foremost responsibility of the financial manager is to determine cash planning activities and to maintain adequate cash balances. At this juncture cash flow statement is an important tool of cash planning and control. The term cash is used to refer to cash in hand and bank balance.

Meaning

Cash flow statement is a statement which is prepared from the historical data showing the inflow and outflow of cash. It shows the sources and uses of cash between the two balance sheet dates. It clearly explains the causes for changes in cash position between two periods. Simply, it is a receipts and payments account in a summary form.

Uses of Cash Flow Statement

Cash flow statement is an important tool of financial analysis. It is vital to financial management. Its main uses are as follows:

- (i) It gives guidance to the management in taking and implementing short-term financial policies.
- (ii) It helps to strengthen the borrowing capacities of the firms. The financial institutions can easily assess the repaying capacities of the firms through the cash flow analysis.

- (iii) It contributes significant role for the capital budgeting decisions.
- (iv) It helps in short-term financial decisions relating to liquidity.
- (v) In order to find out the variation and take necessary remedial measures with the help of the comparison of actual cash flow statements with the projected cash flow statements.
- (vi) To overcome the problem of meeting deficit cash or investment of surplus cash with the help of the projected cash flow statement. Thus, projected cash flow statement is usually prepared on the basis of past year's experience.
- (vii) It explains the causes for poor cash position in spite of huge profits or surplus cash balance in spite of low profits.
- (viii) It explains the major sources and uses of cash for the business concern during a particular period of time.

Notes

5.2. Limitations of Cash Flow Analysis

Cash flow statement is a systematic tool of financial analysis. However, it suffers from some limitations which are as follows:

1. A cash flow statement cannot be equated with the income statement. An income statement considers both cash and non-cash items. So, cash does not mean net income of business.
2. The cash flow statement may not represent the real liquid position of the concern. Due to this aspect, postponing of purchases and payments could be developed.
3. Cash flow statement cannot replace the income statement or fund flow statement. Each and every statement has a separate function to perform.
4. Due to inflation, economic depression and other external factors, projected cash flow statement may not achieve its results.

5.3. Difference between Cash Flow Analysis and Fund Flow Analysis

1. Cash flow statement starts with the opening cash balance and ends with the closing cash balance by processing through various sources and uses. But, there are no opening and closing balances in fund flow statement.
2. Cash from operation can be found out under the cash flow statement. But, fund from operation can be found out under the fund flow statement.
3. Separate statements are prepared for the purpose of finding out increase or decrease in working capital under the fund flow statement. But, no separate statements for increase or decrease in working capital are prepared in cash flow analysis.
4. A cash flow statement explains the causes for the changes in cash and bank balances, i.e. cash receipts and cash payments alone. But, fund flow statement indicates the causes for the changes in net working capital.

Notes

5. Cash flow statement is suitable for short-term financial planning and decision, while fund flow statement is appropriate for long-term financial planning and decisions.
6. Cash flow analysis deals with the movement of actual or notional cash. But, fund flow statement deals with not only cash but also the items constituting working capital. Cash is one of the components of working capital.
7. Whenever, wherever there is inflow of cash there will definitely be inflow of funds. But, sound fund position need not be a sound cash position.

5.4. Steps in Preparation of Cash Flow Statement

Cash flow statement can be prepared on the same pattern on which fund flow statement is prepared. But, here statement of changes in working capital does not need to be prepared. Remaining all other procedures were same in fund flow statement.

Cash flow statement is prepared on any one of the following assumptions:

- When all transactions are taken as cash transactions.
- When all transactions are not cash transactions.

Here, we have to proceed with all the problems by treating all the transactions as cash transactions.

Steps

1. No need to prepare working capital statement
2. Preparation of cash flow statement
3. Preparation of profit & loss account—computation of cash from operation
4. Preparation of separate ledger if necessary
5. Treatment of adjustments

1. No need to prepare the working capital statement

Changes in current assets and current liabilities are adjusted in the cash flow statement itself. So, separate statement is not necessary for the changes in working capital.

2. Cash Flow Statement (Proforma)

Inflow of Cash	Amount ₹	Outflow of Cash	Amount ₹
Opening Cash Balance (including bank balance)	xx	Redemption of Preference Shares	xx
Issue of Shares	xx	Repayment Debenture Holders	xx
Issue of Debentures	xx	Repayment of Loans	xx
Raising of Loans	xx	Purchase of Fixed Assets	xx
Sale of Fixed Assets	xx	Dividend paid	xx
Dividends received	xx	Income Tax paid	xx
		Cash from Operation (Lost in	

Share Premium received	xx	operation) Transfer from P&L	
Cash from Operation	xx	A/c	xx
(Transfer from P&L A/c)	xx	Closing Balance (including bank balance)	
	xx		xx

Cash Flow Statement

Notes

3. Preparation of Profit & Loss Account–Computation of cash from operation

Cash from operations can be found out in two methods. One is statement form another one is preparation of profit and loss account. Normally, cash from operation can be found out with the help of the preparation of profit and loss account because it is an easy and convenient method. Here, profit and loss account is prepared in usual procedure.

Profit and Loss A/c

Dr.

Cr.

	Amount (₹)		Amount (₹)
To Goodwill written off	xx	By Opening Balance b/d	xx
To General reserve	xx	By Dividends received	xx
To Preliminary expenses	xx	By Interest on investments	xx
written off		By Profit on sale of assets	xx
To Depreciation	xx	By Cash from operation	xx
To Loss on sale of fixed assets	xx	(Balancing figure)	
To Loss on sale of Investments	xx		
To Patents & Trade mark			
written off	xx		
To Income tax provided	xx		
To Interim dividend paid	xx		
To Closing balance c/d	xx		
To Cash from operation	xx		
(Balancing figure)			
	xx		xx

4. Preparation of Separate Ledger

If information of any particular assets or liabilities are given in the adjustment, we have to prepare separate asset or liabilities account. Balances from this ledger can be transferred to cash flow statement.

5. Treatment of Adjustments

The additional information which are given apart from the balance sheet

Notes

are, simply called as adjustment. All the adjustments will appear in two places. The following are the important adjustments and their treatment.

- (a) Dividend paid – Cash flow statement – outflow side
– Profit & loss A/c – Debit side
- (b) Depreciation – P & L A/c – Debit side
Respective asset A/c – credit side
- (c) Loss on sale of assets – P & L A/c – Debit side
Respective asset A/c – credit side
- (d) Income Tax provision – P & L A/c – Debit side
– Income Tax – Credit side.

Note:	The adjustments applicable for fund flow statements will also be applicable for cash flow statements.
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Illustration and Solutions

Illustration 1: From the following profit and loss account, compute the case from operations.

Profit and Loss account for the year ended 31.3.2001

	Amount (₹)		Amount (₹)
To Salaries	25,000	By Gross Profit	1,25,000
To Rent	3,000	By Profit on sale of land	15,000
To Depreciation	10,000	By Income tax refund	13,000
To Loss on sale of plant	4,000		
To Goodwill written off	10,000		
To Proposed dividend	15,000		
To Provision for Tax	12,000		
To Net Profit	74,000		
	<u>1,53,000</u>		<u>1,53,000</u>

Solution:

Computation of cash from operation

Net profit earned during the year	74,000
Add: Non-cash and Non-operating expenses	
Depreciation	10,000
Loss on sale of plant	4,000
Goodwill written off	10,000
Proposed dividend	15,000
Provision for tax	<u>12,000</u>
	<u>51,000</u>
	<u><u>1,25,000</u></u>

Less: Non-cash and Non-operating income

Profit on sale of land

15,000

Income tax refund

13,000

28,000

Cash from operation

97,000

Cash Flow Statement

Notes

Illustration 2: From the following particulars of Mrs. Ragu, prepare cash flow statements.

Liabilities:	1.1.99 (₹)	31.12.99 (₹)
Creditors	36,000	41,000
Mrs. A's Loan	—	20,000
Capital	1,48,000	1,49,000
Bank Loan	30,000	25,000
	<u>2,14,000</u>	<u>2,35,000</u>
Assets:		
Cash	4,000	3,600
Debtors	35,000	38,400
Stock	25,000	22,000
Land	20,000	30,000
Buildings	50,000	55,000
Machinery	80,000	86,000
	<u>2,14,000</u>	<u>2,35,000</u>

During the year Mrs. Ragu had drawn ₹ 26,000 for personal use. The provision for depreciation against machinery as on 1.1.99 was ₹ 27,000 and as on 31.12.99 ₹ 36,000.

Solution:

Cash Flow Statement

Inflow of cash	Amount (₹)	Outflow of Cash	Amount (₹)
Opening Cash Balance	4,000	Repayment of Bank loan	5,000
Loan borrowed from Mrs. A	20,000	Increase in Debtors	3,400
Decrease in Stock	3,000	Purchase of Land	10,000
Cash from Operation (1)	36,000	Purchase of Buildings	5,000
Increase in Creditors	5,000	Capital Account (Drawings)	26,000
		Purchase of Machinery (3)	15,000
		Closing Cash Balance	3,600
	<u>68,000</u>		<u>68,000</u>

Notes

Workings:

1. Profit and Loss Account

	Amount (₹)		Amount (₹)
To Depreciation (4)	9,000	By Cash from Operation	36,000
To Capital Account	27,000		
	36,000		36,000

2. Capital Account

To Cash (Drawings)	26,000	By Balance b/d	1,48,000
To Balance c/d	1,49,000	By Profit & Loss A/c (Transfer to P&L A/c)	27,000
	1,75,000		1,75,000

3. Machinery Account

To Balance b/d (80,000 + 27,000)	1,07,000	By Balance c/d (86,000 + 36,000)	1,22,000
To Cash (b/f)	15,000		
	1,22,000		1,22,000

4. Accumulated Depreciation Account

To Balance c/d	36,000	By Balance b/d	27,000
		By P&L A/c (b/f)	9,000
	36,000		36,000

Illustration 3: The following are the summarised balance sheets of South Computers Ltd. as on 31.12.2000 and 31.12.2001.

Liabilities	2000 (₹)	2000 (₹)	Assets	2000 (₹)	2000 (₹)
Share Capital	2,00,000	2,50,000	Land & Buildings	2,00,000	1,90,000
General Reserve	50,000	60,000	Machinery	1,50,000	1,69,000
P&L A/c	30,500	30,600	Stock	1,00,000	74,000
Bank Loan	70,000	—	Sundry Debtors	80,000	64,200
Sundry Creditors	1,50,000	1,35,200	Cash	500	600
Provision for Taxation	30,000	35,000	Bank	—	8,000
	5,30,500	5,10,800	Goodwill	—	5,000
				5,30,500	5,10,800

The following additional information for the the year 2001 is also available:

- (i) Dividend of ₹ 23,000 was paid.
- (ii) The following assets of another company were purchased for a consideration of ₹ 50,000 paid in shares.
 - (a) Stock ₹ 20,000 and (b) Machinery ₹ 25,000
- (iii) Machinery was further purchased for ₹ 8,000.

(iv) Depreciation written off machinery ₹ 12,000.

(v) Income Tax provided during the year ₹ 33,000.

(vi) Loss on sale of machinery ₹ 200 was written off to general reserve.

(vii) Prepare cash flow statement.

Solution:

Cash Flow Statement

Inflow of Cash	Amount (₹)	Outflow of Cash	Amount (₹)
Opening Cash Balance	500	Repayment of Bank Loan	70,000
Sale of Land & Building	10,000	Decrease in Sundry Creditors	14,800
Decrease in Sundry Debtors	15,800	Dividend paid	23,000
Sale of Machinery	1,800	Purchase of Machinery	8,000
Sale of Stock	46,000	Income Tax paid	28,000
Cash from Operation	78,300	Closing Cash Balance	8,600
		(8,000 + 600)	
	1,52,400		1,52,400

Workings:

1. Share Capital Account

	Amount (₹)		Amount (₹)
To Balance c/d	2,50,000	By Balance b/d	2,00,000
		By Stock	20,000
		By Machinery	25,000
		By Goodwill	5,000
	2,50,000		2,50,000

2. General Reserve Account

To Loss on Sale of Machinery	200	By Balance b/d	50,000
To Balance c/d	60,000	By Profit & Loss A/c	10,200
	60,200		60,200

3. Provision for Taxation Account

To Cash (Tax paid)	28,000	By Balance b/d	30,000
To Balance c/d	35,000	By P & L A/c	33,000
	63,000		63,000

4. Profit and Loss Account

To Dividend Paid	23,000	By Balance b/d	30,500
To Depreciation on Machinery	12,000	By Cash from Operation	78,300
To Income Tax provided	33,000		
To Transfer to General Reserve	10,200		

Notes

To Balance c/d	30,600		
	1,08,800		1,08,800

5. Machinery Account

Notes

To Balance b/d	1,50,000	By Depreciation	12,000
To Shares	25,000	By Loss on Sale of Machinery	200
To Cash	8,000	By Cash (b/f)	1,800
		By Balance c/d	1,69,000
	1,83,000		1,83,000

6. Stock Account

To Balance b/d	1,00,000	By Cash (b/f)	46,000
To Shares	20,000	By Balance c/d	74,000
	1,20,000		1,20,000

7. Goodwill Account

To Balance b/d	Nil	By Balance c/d	5,000
To Shares	5,000		
	5,000		5,000

Note: In the absence of direction, the differences in the Land & Building value (i.e., 2,00,000 – 1,90,000 = 10,000) are treated as sale of Land & Building and not as depreciation. If any specific direction is given in the problem, we proceed with the problem according to the direction.

Illustration 4: From the following Balance Sheet of Exe Ltd., prepare cash flow statement.

Liabilities	1999 (₹)	2000 (₹)
Equity Share Capital	3,00,000	4,00,000
Redeemable preference		
Share Capital	1,50,000	1,00,000
General Reserve	40,000	70,000
Profit & Loss A/c	30,000	48,000
Proposed Dividend	42,000	50,000
Creditors	55,000	83,000
Bills Payable	20,000	16,000
Provision for Taxation	40,000	50,000
	6,77,000	8,17,000

Assets	1999 (₹)	2000 (₹)
Goodwill	1,15,000	90,000
Land & Buildings	2,00,000	1,70,000
Plant	80,000	2,00,000
Debtors	1,60,000	2,00,000
Stock	77,000	1,09,000
Bills Receivable	20,000	30,000
Cash in Hand	15,000	10,000
Cash at Bank	10,000	8,000
	6,77,000	8,17,000

Notes

The following additional information is also available:

- Depreciation of ₹ 10,000 and ₹ 20,000 have been charged on Plant and Land and Buildings in 2000.
- A dividend of ₹ 20,000 has been paid in 2000.
- Income tax of ₹ 35,000 has been paid during 2000.

Solution:

Cash Flow Statement

Inflow of cash	Amount (₹)	Outflow of cash	Amount (₹)
Opening Cash Balance	25,000	Redemption of Preference	
Issue of Shares	1,00,000	Shares	50,000
Increase in Sundry Creditors	28,000	Dividend paid	42,000
Sale of Land & Building	10,000	Decrease in Bills Payable	4,000
Cash from Operation	2,18,000	Increase in Debtors	40,000
		Increase in Stock	32,000
		Increase in Bills Receivable	10,000
		Purchase of Plant	1,30,000
		Interim Dividend paid	20,000
		Income Tax paid	35,000
		Closing Cash Balance	18,000
		(10,000 + 8,000)	
	3,81,000		3,81,000

Workings:

1. Profit and Loss Account

	Amount (₹)		Amount (₹)
To General Reserve	30,000	By Balance c/d	30,000
To Proposed Dividend	50,000	By Cash from Operation	2,18,000

Notes

To Goodwill Written off	25,000		
To Depreciation of Plant	10,000		
To Depreciation of Land & Buildings	20,000		
To Interim Dividend paid	20,000		
To Income Tax provided (2)	45,000		
To Balance c/d	48,000		
	2,48,000		2,48,000

2. Provision for Taxation Account

To Cash (Tax paid)	35,000	By Balance b/d	40,000
To Balance c/d	50,000	By P&L A/c	45,000
	85,000	(Tax Provisions)	85,000

3. Land & Buildings Account

To Balance b/d	2,00,000	By Depreciation A/c	20,000
		By Balance c/d	1,70,000
		By Cash (b/f)	10,000
	2,00,000		2,00,000

4. Plant Account

To Balance b/d	80,000	By Depreciation	10,000
To Cash (b/f)	1,30,000	By Balance c/d	2,00,000
	2,10,000		2,10,000

Illustration 5: From the following Balance Sheet of Gristol Ltd., make out the statement of sources and uses of case.

Liabilities	1998 (₹)	1999 (₹)	Assets	1998 (₹)	1999 (₹)
Capital	1,15,000	1,15,000	Cash & Bank		
Sundry Creditors	51,500	48,000	Balance	45,000	45,000
Outstanding Expn.	6,500	6,000	Sundry Debtors	33,500	21,500
8% Debentures	45,000	35,000	Temporary		
Depreciation Fund	20,000	22,000	Investment	55,000	37,000
Reserve for			Prepaid Expenses	500	1,000
Contingencies	30,000	30,000	Stock in Trade	41,000	53,000
Profit & Loss A/c	8,000	11,500	Land & Buildings	75,000	75,000
			Machinery	26,000	35,000
	2,76,000	2,67,500		2,76,000	2,67,500

The following additional information is also available:

- (i) 10% dividend was paid in cash.

- (ii) New machinery for ₹ 15,000 was purchased but old machinery costing ₹ 6,000 was sold for ₹ 2,000; accumulated depreciation was ₹ 3,000.
- (iii) ₹ 10,000 8% debentures were redeemed by purchase from open market @ ₹ 96 for a debenture of ₹ 100.
- (iv) ₹ 18,000 investments were sold at book value.

Solution:

Notes

Cash Flow Statement

Inflow of cash	Amount (₹)	Outflow of cash	Amount (₹)
Opening Cash Balance	45,000	Decrease in Sundry Creditors	3,500
Decrease in Sundry Debtors	12,000	Decrease in Outstanding Expenses	500
Sale of Machinery	2,000	Increase in Prepaid Expenses	500
Sale of Investments	18,000	Redemption of Debentures	9,600
Cash from Operation	20,600	Increase in Stock in Trade	12,000
		Payment of Dividend	11,500
		Purchase of Machinery	15,000
		Closing Stock Balance	45,000
	97,600		97,600

Workings:

1. Profit and Loss Account

	Amount (₹)		Amount (₹)
To Payment of Dividend	11,500	By Balance b/d	8,000
To Loss on Sale of Machinery	1,000	By Profit on Redemption of Debentures	400
To Depreciation	5,000	(10,000 – 9,600)	
To Balance c/d	11,500	By Cash from Operation	20,600
	29,000		29,000

2. Accumulated Depreciation Account

To Machinery	22,000	By Balance b/d	20,000
To Balance c/d	3,000	By P&L A/c (b/f)	5,000
	25,000		25,000

3. Machinery Account

To Balance b/d	26,000	By Cash	2,000
To Cash (b/f)	15,000	By P&L A/c	1,000
		By Accumulated Depreciation	3,000
		By Balance c/d	35,000
	41,000		41,000

Notes

4. Debenture Account

To Cash	9,600	By Balance b/d	45,000
To Profit on Redemption	400		
To Balance c/d	35,000		
	45,000		45,000

5. Investment Account

To Balance b/d	55,000	By Cash	18,000
		By Balance c/d	37,000
	55,000		55,000

Note: Redemption of debenture $\frac{96}{100} \times 10,000 = 9,600$
 Actual value of debenture = 10,000
 Amount paid = 9,600
 Profit on Redemption of debenture = 400

Illustration 6: From the comparative Balance Sheets of Serial Engineering Ltd. As at 31.12.1998 and other information furnished, prepare a cash flow statement for the year ended on 31.12.1998.

Liabilities	1997 (₹)	1998 (₹)	Assets	1997 (₹)	1998 (₹)
Equity Share Capital	50,000		Fixed Assets	2,40,000	4,20,000
		2,00,000	Investments	18,000	15,000
Redeemable Pref. } Share Capital	1,00,000	—	Stock	58,500	1,60,000
Retained Earning	1,20,000	3,50,000	Sundry Debtors	1,37,000	92,000
Unsecured Loan	1,25,000	—	Cash at Bank	1,85,000	1,20,000
Bills Payable	2,25,000	1,90,000	Prepaid Expenses	6,500	8,000
Provision for Tax	25,000	75,000			
	6,45,000	8,15,000		6,45,000	8,15,000

The following additional information is also available:

- On 31.12.1998 accumulated depreciation on fixed assets amounted to ₹ 1,20,000 and on 31st December 1997 to ₹ 1,10,000.
- Machinery costing ₹ 10,000 (Accumulated depreciation thereon being ₹ 5,000) was discarded and written off during 1998.
- Depreciation written off during 1998 amounted to ₹ 15,000.
- During the year 1998 investments costing ₹ 6,000 were sold for ₹ 7,000.
- Dividend paid during the year was ₹ 45,000.
- Redeemable preference shares were redeemed out of profile during the year at a premium of 5%.

Solution:

Cash Flow Statement

Cash Flow Statement

Inflow of cash	Amount (₹)	Outflow of cash	Amount (₹)
Opening Cash Balance	1,85,000	Repayment Unsecured Loan	1,25,000
Issue of Shares	1,50,000	Decrease in Bills Payable	35,000
Increase in Provision for Taxation	50,000	Increase in Stock	1,01,500
Decrease in Sundry Debtors	45,000	Increase in Prepaid Expenses	1,500
		Dividend paid	45,000
Sale of Investments	7,000	Purchase of Fixed Assets (3)	2,00,000
Cash from operation	2,99,000	Redemption of Preference Shares	1,05,000
		Purchase of Investment (4)	3,000
		Closing Cash Balance	1,20,000
	7,36,000		7,36,000

Notes

Workings:

1. Profit and Loss Account

	Amount (₹)		Amount (₹)
To Loss on Machinery (Discarded)	5,000	By Balance b/d	1,20,000
To Dividend paid	45,000	By Profit on Sale of Investment	1,000
To Premium on Redemption of Preference Shares	5,000	By Cash from Operation	2,99,000
To Depreciation	15,000		
To Balance c/d	3,50,000		
	4,20,000		4,20,000

2. Redeemable Preference Share Capital Account

To Cash	1,05,000	By Balance b/d	1,00,000
		By Premium	5,000
	1,05,000		1,05,000

3. Fixed Assets Account (Machinery)

To Balance b/d	3,50,000	By Profit & Loss A/c	5,000
To Cash	2,00,000	By Accumulated Depreciation	5,000
		By Balance c/d	5,40,000
		(4,20,000 + 1,20,000)	
	5,50,000		5,50,000

Notes

4. Investment Account

To Balance b/d	18,000	By Cash	6,000
To Cash	3,000	By Balance c/d	15,000
	21,000		21,000

5. Accumulated Depreciation Account

To Balance c/d	1,20,000	By Balance b/d	1,10,000
To Machinery	5,000	By P&L A/c	15,000
	1,25,000		1,25,000

Note: Journal Entry for Adjustment (ii & iv)

(ii) Profit & Loss A/c	Dr.	5,000	
Accumulated Depreciation A/c	Dr.	5,000	
To Machinery A/c			10,000
(iv) Cash A/c	Dr.	7,000	
To Profit & Loss A/c			1,000
To Investment A/c			6,000

Illustration 7: Kapin Ltd. furnishes you the following Balance Sheet for the year ending on 31.12.2002 and 2003. You are required to prepare cash flow statement of the year ended on 31.12.2003.

Liabilities	2002 (₹)	2003 (₹)	Assets	2002 (₹)	2003 (₹)
Equity Share Capital	10,000	10,000	Goodwill	1,200	1,200
General Reserve	1,400	1,800	Land	4,000	3,600
Profit & Loss A/c	1,600	1,300	Building	3,700	3,600
Sundry Creditors	800	540	Equipment	1,000	1,100
Bills Payable	120	80	Stock	3,000	2,340
Provision for Taxation	1,600	1,800	Accounts Receivable	2,000	2,220
Provision for Bad Debts	40	60	Bank Balance	660	1,520
	15,560	15,580		15,560	15,580

The following additional information is also available:

- (i) A piece of land has also been sold for ₹ 800.
- (ii) Depreciation amounting to ₹ 600 has been charged on building.
- (iii) Provision for taxation has been made for ₹ 1,700 during the year.

Solution:

Cash Flow Statement

Inflow of cash	Amount (₹)	Outflow of cash	Amount (₹)
Opening Cash Balance	660	Decrease in Sundry Creditors	260
Decrease in Stock	660	Decrease in Bills Payable	40

Notes

Sale of Land	800	Purchase of Equipment	100
Cash from Operation	2,420	Increase in Account Receivables	220
		Tax paid	1,500
		Purchase of Building	500
		Land Purchased	400
		Closing Cash Balance	1,520
	4,540		4,540

Workings:

1. Profit and Loss Account

	Amount (₹)		Amount (₹)
To General Reserve	400	By Balance b/d	1,600
To Provision for Doubtful Debts	20	By Cash from Operation	2,420
To Depreciation on Building	600		
To Income Tax Provision	1,700		
To Balance c/d	1,300		
	4,020		4,020

2. Provision for Taxation Account

To Cash (Tax paid)	1,500	By Balance b/d	1,600
To Balance c/d	1,800	By Profit & Loss A/c (Income Tax provision)	1,700
	3,300		3,300

3. Land Account

To Balance b/d	4,000	By Cash	800
To Cash	400	By Balance c/d	3,600
	4,400		4,400

4. Building Account

To Balance b/d	3,700	By Depreciation (P&L A/c)	600
To Cash	500	By Balance c/d	3,600
	4,200		4,200

Cash Flow (AS 3) Revised Format

Under the revised format, cash flow statement should be prepared in such a way as to report the cash flows during the periods separately for operating, investing and financing activities.

I. Cash Flows from Operating Activities

Net profit earned during the year	xx
Add: Depreciation	xx

Notes

Loss on sale of machinery	XX	
Preliminary expenses written off	XX	
Goodwill written off	XX	
Patents and copy right written off	XX	
Operating profit before working capital changes	XX	
Adjustment of working capital		
(Add cash flow, less cash outflows)		
Decrease in current assets	XX	
Decrease in current liabilities	XX	
Increase in current assets	XX	
Increase in current liabilities	XX	
Cash flows from operating activities		XX

II, Cash Flows from Investing Activities

Purchase of machinery	XX	
Purchase of land & building	XX	
Purchase of goodwill	XX	
Purchase of furniture	XX	
Sale of machinery	XX	
Sale of land & building	XX	
Sale of furniture	XX	
Interest on investment received	XX	
Cash flows from investing activities		XX

III, Cash Flows from Financing Activities

Issue shares	XX	
Issue debentures	XX	
Loan borrowed	XX	
Redemption of shares	XX	
Redemption of debentures	XX	
Loan repaid	XX	
Dividend paid	XX	
Interim dividend paid	XX	
Drawings	XX	
Net cash flows from financing activities		XX
Net increase or decrease in cash and cash equivalent		XX
Add: Opening cash balance		
(Adjust BOD if any given the problem)		XX
Closing Cash Balance		XX
(Adjust BOD if any given the problem)		

NOTE:	In the question will specifically mention for the applying revised methods only, we follow the revised format otherwise better to follow Existing format.
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Illustration 8: You have been asked by the management of a firm to project a Trading, Profit and Loss A/c and the Balance Sheet on the basis of the following estimated figures and ratios, for the next financial year.

Cash Flow Statement

Ratio to gross profit	20%
Stock turnover ratio	5 times
Average debt collection period	3 Months
Creditors	3 Months
Current ratio	2
Proprietary ratio (fixed assets to capital employed)	75%
Capital gearing ratio (Preference shares and debentures to equity)	30%
Net profit to issued equity capital	10%
General reserve and Profit and Loss to issued equity capital	25%
Preference share capital to debentures	2
Cost of sales consists of 50% for materials	
Gross profit	₹ 6,25,000

Notes

Solution:

Projected Trading and Profit Loss Account

Expenses	Amount (₹)	Incomes	Amount (₹)
To Cost of Materials	12,50,000	By Sales	31,25,000
To Direct expenses	12,50,000		
To Gross profit	6,25,000		
	31,25,000		31,25,000
To Indirect expenses	4,81,500	By Gross Profit	6,25,000
(Balancing figure)	1,43,500		
To Net Profit	6,25,000		6,25,000

Projected Balance Sheet

Liabilities	(₹)	Assets	(₹)
Preference Share Capital	5,12,500	Fixed Assets	19,21,875
Equity Share Capital	14,35,000	Current Assets:	
Debentures	2,56,250	Stock	5,00,000
General Reserve	2,15,250	Debtors	7,81,250
Profit and Loss A/c	1,43,500		
Current Liabilities:			
Overdraft	3,28,125		
Creditors	3,12,500		
	32,03,125		32,03,125

Notes

Workings:

(1) Sales:

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

$$(i.e.) 20 = \frac{\text{₹ } 6,25,000}{\text{Sales}} \times 100$$

$$20 \text{ Sales} = \text{₹ } 6,25,000 \times 100$$

$$\text{Sales} = \frac{\text{₹ } 6,25,000}{20} \times 100$$

$$= \text{₹ } 31,25,000$$

(2) Cost of Sales:

$$\text{Cost of Sales} = \text{Sales} - \text{Gross Profit}$$

$$= \text{₹ } 31,25,000 - \text{₹ } 6,25,000$$

$$= \text{₹ } 25,00,000$$

(3) Materials:

$$50\% \text{ of Cost of Sales} = 50\% \text{ of ₹ } 25,00,000$$

$$= \text{₹ } 12,50,000$$

(4) Direct Expenses:

$$\text{Direct Expenses} = \text{Cost of Sales} - \text{Cost of Materials}$$

$$= \text{₹ } 25,00,000 - \text{₹ } 12,50,000$$

$$= \text{₹ } 12,50,000$$

(5) Stock:

$$\text{Stock Turnover Ratio} = \frac{\text{Cost of Sales}}{\text{Stock}} = 5$$

$$i.e. 5 = \frac{\text{₹ } 25,00,000}{\text{Stock}}$$

$$\text{Stock} = \text{₹ } 5,00,000 (25,00,000/5)$$

(6) Debtors:

$$\text{Debtors Turnover} = \frac{\text{Debtors}}{\text{Credit Sales}} \times 12$$

$$(i.e.) 3 = \frac{\text{Debtors}}{\text{₹ } 31,25,000} \times 12$$

$$\text{Debtors} = \text{₹ } 7,81,250$$

(7) Total Current Assets:

$$= \text{Stock} + \text{Debtors}$$

$$= \text{₹ } 5,00,000 + \text{₹ } 7,81,250$$

$$= \text{₹ } 12,81,250$$

(8) Current Liabilities:

$$= \frac{\text{Current Assets}}{\text{Current Liabilities}} = 2$$

$$(i.e.) 2 \text{ Current Liabilities} = \text{Current Assets}$$

$$\text{Current Liabilities} = \frac{\text{₹ } 12,81,250}{2}$$

$$= \text{₹ } 6,40,625$$

(9) Creditors:

$$\text{Creditors Turnover Ratio} = \frac{\text{Creditors}}{\text{Credit Purchases}} \times 12 = 3$$

$$(i.e.) 3 = \frac{\text{Creditors}}{\text{₹ 12,50,000}} \times 12$$

$$\text{Creditors} = \text{₹ 3,12,500}$$

(Materials have been purchased on credit)

(10) Overdraft:

$$\begin{aligned} \text{Overdraft} &= \text{Current Liabilities} - \text{Creditors} \\ &= \text{₹ 6,40,625} - \text{₹ 3,12,500} \\ &= \text{₹ 3,28,125} \end{aligned}$$

(11) Fixed Assets:

$$\frac{\text{Fixed Assets}}{\text{Capital Employed}} = \frac{75}{100}$$

$$\frac{\text{Working Capital}}{\text{Capital Employed}} = \frac{25}{100}$$

$$\begin{aligned} \text{Working Capital} &= \text{Current Assets} - \text{Current Liabilities} \\ &= \text{₹ 12,81,250} - \text{₹ 6,40,625} \\ &= \text{₹ 6,40,625} \end{aligned}$$

$$\begin{aligned} \text{Fixed Assets} &= \text{₹ 6,40,625} \times 3 \\ &= \text{₹ 19,21,875} \end{aligned}$$

(12) Capital Employed:

$$\begin{aligned} \text{Capital Employed} &= \text{Fixed Assets} + \text{Current Assets} \\ &\quad - \text{Current Liabilities} \\ &= \text{₹ 19,21,875} + \text{₹ 12,81,250} - \text{₹ 6,40,625} \\ &= \text{₹ 25,62,500} \end{aligned}$$

(13) Capital Gearing Ratio:

$$= \frac{\text{Pref. Share Capital} + \text{Debenture}}{\text{Total Capital Employed}} = 30\%$$

$$\begin{aligned} \text{Pref. Share Capital} + \text{Debentures} &= 30\% \text{ of ₹ 25.62,500} \\ &= \text{₹ 7,68,750} \end{aligned}$$

$$\begin{aligned} \text{Equity Shareholders' Fund} &= \text{Capital Fund} - (\text{Pref. Share Capital and} \\ &\quad \text{Debentures}) \\ &= \text{₹ 25,62,500} - \text{₹ 7,68,750} \\ &= \text{₹ 17,93,750} \end{aligned}$$

$$\text{Preference Share Capital} = \text{₹ 7.68,750} \times \frac{2}{3} = \text{₹ 5,12,500}$$

$$\text{Debentures} = \text{₹ 7,68,750} \times \frac{1}{3} = \text{₹ 2,56,250}$$

(14) General Reserve and Profit and Loss:

$$25\% \text{ of Equity Share Capital} = \text{₹ 17,93,750} \times \frac{25}{100} = \text{₹ 3,58,750}$$

(Shareholders Fund include General Reserve and Profit)

Notes

(15) Equity Share Capital:

Equity Shareholders Fund -- (Reserve and Profit)

₹.17,93,750 – ₹ 3,58,750 = ₹ 14,35,000

(16) Profit:

10% of Equity Share Capital

10% of ₹ 14,35,000 = ₹ 1,43,500

(17) General Reserve:

General Reserve and Profit – Profit

₹ 3,58,750 – ₹ 1,43,500 = ₹ 2,15,250

5.5. Summary

- Cash contributes significant role in the entire economic activities of the business world.
- Cash flow statement is a statement which is prepared from the historical data showing the inflow and outflow of cash. It shows the sources and uses of cash between the two balance sheet dates. It clearly explains the causes for changes in cash position between two periods. Simply, it is a receipts and payments account in a summary form.
- Cash flow statement is an important tool of financial analysis.
- It gives guidance to the management in taking and implementing short-term financial policies.
- It helps to strengthen the borrowing capacities of the firms.
- It contributes significant role for the capital budgeting decisions.
- It explains the causes for poor cash position in spite of huge profits or surplus.
- Cash flow statement is prepared on any one of the following assumptions.
 - When all transactions are taken as cash transactions.
 - When all transactions are not cash transactions.

5.6. Review Questions

1. What is meant by cash flow statement?
2. How will you prepare the cash flow statement?
3. What is the purpose of preparing cash flow statement?
4. What are the differences between cash flow and fund flow statement?
5. Explain the advantages of cash flow statement.
6. What are the limitations of cash flow statement?
7. Statement of financial position of Mr. Arun is given below.

Liabilities	1.1.2000 (₹)	31.12.200 (₹)	Assets	1.1.2000 (₹)	31.12.200 (₹)
Account Payable	29,000	25,000	Cash	40,000	30,000
Capital	7,39,000	6,15,000	Debtors	20,000	17,000
			Stock	8,000	13,000

			Building	1,00,000	80,000
			Other fixed		
			Assets	6,00,000	5,00,000
	7,68,000	6,40,000		7,68,000	6,40,000

Notes

The following additional information is also available:

(a) There were no drawings.

(b) There were no purchases or sale of either building or other fixed assets. Prepare a statement of cash flow.

8. The Balance Sheet of Super Computers Ltd. as on 31.12.1992 and 31.12.1993 respectively are given below.

Liabilities	1992 (₹)	1993 (₹)	Assets	1992 (₹)	1993 (₹)
Share Capital	1,00,000	1,60,000	Fixed assets at		
Retained Earnings		85,300	cost	1,52,000	2,00,000
Accumulated	70,250		Inventory	93,400	89,200
Depreciation	60,000	40,000	Sundry Debtors	30,800	21,100
6% Debentures	50,000	—	Prepaid Expenses	3,950	3,000
Sundry creditors	28,000	48,000	Bank	28,100	20,000
	3,08,250	3,33,300		3,08,250	3,33,300

The following additional information for the year 1993 is also available.

(i) Net profit ₹ 27,050

(ii) Depreciation charged ₹ 10,000

(iii) Cash dividend declared during the period ₹ 12,000

(iv) An addition to the building was made during the year at a cost of ₹ 78,000 and fully depreciated equipment costing ₹ 30,000 was discarded, no salvage value being realised. Prepare a cash flow statement.

9. Balance Sheets of M/s. Black and White as on 1st Jan. 2000 and 31st Dec. 2000 were as follows.

Liabilities	Jan. 2000 (₹)	Dec. 2000 (₹)	Assets	Jan. 2000 (₹)	Dec. 2000 (₹)
Creditors	40,000	44,000	Cash	10,000	7,000
White Loan	25,000	—	Debtors	30,000	50,000
Loan from Bank	40,000	50,000	Stock	35,000	25,000
Capital	1,25,000	1,53,000	Land	40,000	50,000
			Building	35,000	60,000
			Machinery	80,000	55,000
	2,30,000	2,47,000		2,30,000	2,47,000

Notes

During the year machine costing ₹ 10,000 (accumulated depreciation ₹ 3,000) was sold for ₹ 5,000. The provision for depreciation against machinery as on 1st Jan. 2000 was ₹ 25,000 and on 31st Dec. 2000 ₹ 40,000. Net profit for the year 2000 amounted to ₹ 45,000. Prepare cash flow statement.

10. From the following comparative Balance Sheet of ABC Ltd. as on 31.12.2002 and 2002.

Liabilities	2001 (₹)	2002 (₹)	Assets	2001 (₹)	2002 (₹)
Share Capital	70,000	74,000	Cash	9,000	7,800
Debentures	12,000	6,000	Trade Debtors	14,900	17,700
Creditors	10,360	11,840	Marketable Securities	49,200	42,700
Provision for Doubtful Debts	700	800	Land	20,000	30,000
Profit & Loss A/c	10,040	10,560	Goodwill	10,000	5,000
	1,03,100	1,03,200		1,03,100	1,03,200

The following additional information is also available:

- Dividend of ₹ 3,500 was paid during the year 2002.
- Land was purchased for ₹ 10,000 and amount provided for the amortization of goodwill of ₹ 5,000.
- Debentures was repaid ₹ 6,000.

Prepare cash flow statement.

11. The Comparative Balance Sheets of Mr. Hitler for the two years are as follows.

Liabilities	2002 (₹)	2003 (₹)	Assets	2002 (₹)	2003 (₹)
Loan from Wife	—	20,000	Cash	11,000	15,000
Bills Payable	12,000	8,000	Debtors	40,000	35,000
Creditors	25,000	52,000	Stock	25,000	30,000
Loan from Bank	43,000	60,000	Machinery	20,000	14,000
Capital	66,000	34,000	Land & Buildings	50,000	80,000
	1,46,000	1,74,000		1,46,000	1,74,000

The following additional information is also available:

- Net Loss for the year 2003 amounted to ₹ 13,000.
- During the year machine costing ₹ 5,000 (accumulated depreciation ₹ 2,000) was sold for ₹ 2,500. The provision for depreciation against machinery as on 31.12.2002 was ₹ 6,000 and on 31.12.2003 was ₹ 7,000.

12. Prepare a cash flow statement from the Balance Sheets of TTD & Co. as on 31.3.2000 and 31.3.2001. (₹ In thousands)

Liabilities	2000 (₹)	2001 (₹)	Assets	2000 (₹)	2001 (₹)
Capital	140	140	Fixed Assets (Net)	90	87
Reserves	74	105	Cash	75	97
Creditors	32	35	Debtors	43	40
Outstanding Wages	3	4	Inventory	49	58
Expenses Outstanding	11	3	Prepaid Expenses	3	5
	260	287		260	287

Notes

Accumulated depreciation was ₹ 16,000 and ₹ 19,000 respectively at the beginning and end of the year 2001.

Other information Sales ₹ 3,00,000, Wages ₹ 23,000, Operating Expenses ₹ 47,000, Cost of goods ₹ 1,90,000, Rent ₹ 6,000 and Depreciation ₹ 3,000.

13. Prepare cash flow statement under Revised format from the following Balance Sheets of Tiruchengodu Traders Ltd.

Liabilities	2000 (₹)	2001 (₹)	Assets	2000 (₹)	2001 (₹)
Share Capital	17,00,000	18,35,000	Buildings	8,00,000	10,00,000
Reserves	40,000	83,700	Plant and Machinery	2,50,000	3,70,000
P & L App. A/c	1,00,000	1,30,000	Furniture	5,000	6,000
Provision for Dividends	70,000	50,000	Cash	2,000	2,200
Creditors	1,00,000	95,000	Debtors	1,00,000	45,000
Bank Overdraft	8,000	18,000	Bills Receivable	8,000	9,000
Bills Payable	14,000	13,000	Stock	4,00,000	3,43,700
Mortgage Loan	10,000	70,000	Prepaid Expenses	3,000	3,100
			Investments	1,64,000	1,70,000
			Goodwill	3,00,000	3,43,700
			Preliminary Expenses	10,000	2,000
	20,42,000	22,94,700		20,42,000	22,94,700

The following additional information is also available:

- Depreciation is charged on buildings at 3% of cost of ₹ 9,00,000 on plant and machinery at 8% of cost of ₹ 4,00,000; Furniture at 5% of cost ₹ 8,000.
- Investments were purchased and interest was received ₹ 3,000 which was used in writing down the book value of investment.
- The declared dividends for 70,000 were paid and interim dividend for ₹ 20,000 was paid out of P & L App. A/c.

Ratio Analysis

Notes

Structure

- 6.1. Meaning
- 6.2. Significance of Ratio Analysis
- 6.3. Advantages of Ratio Analysis
- 6.4. Limitations of Ratio Analysis
- 6.5. Classification of Ratios
- 6.6. Summary
- 6.7. Review Questions

6.1. Meaning

Ratio is simply a number expressed in terms of another. It refers to the numerical or quantitative relationship between two variables that are comparable. It is a comparison of the numerator with the denominator.

In other words, the ratio means relationship between two figures expressed mathematically. It can be expressed in terms of percentage proportions and quotient too.

6.2. Significance of Ratio Analysis

Ratio analysis is an effective and suitable tool of financial analysis. Analysis of financial statement with the support of ratios would guide the management in important decision-making, implementation and control. Ratio analysis is an instrument for diagnosing the financial health of an enterprise. The usefulness of the ratio analysis is not only for the financial manager, but also to various parties who are interested to know different purposes of financial information. In the real sense, ratio analysis is based on the accounting data contained in the financial statements. Various classifications of ratios are used for different purposes.

6.3. Advantages of Ratio Analysis

1. **Simplifies Financial Statement:** Financial Statement contains the summary of one year's financial activities, *i.e.* as application of Ratio as against the financial statements. The interested people can know the information without any difficulty because the entire financial statement is simplified in an easy manner.
2. **Facilitates Intra-firm Comparison:** Analysis and interpretation of a particular firm over a period of year can be made. And also comparison

among different divisions of the organisation is made easy with the help of various ratios.

3. **Planning and Forecasting:** Actually ratios are derived from the past financial statements. Ratios give suitable guidance to management for formulating various budgets and construct relevant policies and also to prepare the future plan of action, etc.
4. **Aid to Inter-firm Comparison:** Comparison between two or more firms is more essential. In this regard, absolute figures are not sufficient to determine the correct comparison of firms. With the help of the ratios, one firm is able to compare with another firm and also find out their position.
5. **Facilitates Decision Making:** Ratios throw light on the degree of efficiency of the management and utilisation of the assets. That is why it is called surveyor of efficiency. They help the management in the aspect of decision-making.
6. **Helps in Corrective Action:** Ratio analysis facilitates the inter-firm comparison. It exposes the successful and unsuccessful firms. At the time of comparison, if any of the unfavourable variations are identified, immediately the corrective actions should be taken.
7. **Aid to Coordination:** The management wants to establish harmonious and cordial relationship among all the departments in the organisation. Meanwhile, the strength and weakness of the organisation should be communicated in an easily understandable manner. This type of quick and clear communication can achieve better coordination.

Notes

6.4. Limitations of Ratio Analysis

1. **Limitations of Financial Statements:** Ratios are usually calculated on the past year's financial data contained in the financial statement. In the real sense, financial statements suffer a number of limitations. When ratios are derived from the financial statements, they also suffer from the same limitations.
2. **Differences in Definition:** There is no clear cut formula for computing ratios. Each and every company follows a separate formula for computing different ratios. Due to these different types of formulas, comparison of different industries becomes difficult.
3. **Ratios Alone are not Adequate:** Various tools are available for evaluating the financial performance of a company. Under this aspect, ratios are tools of quantitative analysis only. Normally, qualitative factors which may, generally, influence the arrival of conclusion are ignored while computing ratios.
4. **Problems of Price Level Changes:** Even though there are certain limitations, inflation is utmost important for industrial and economic development of the country. Due to this aspect, price fluctuation could not be eliminated. Ratios fail to reflect the price level changes as they are based on Historical data. Hence, they may give misleading results when inflationary conditions are ignored.

Notes

5. **It is not Substitute for Personal Judgement:** It is only a beginning and gives limited information for decision-making. It is just an aid and cannot replace thinking and personal judgement employed in the decision-making aspect.

5. **Ratios Can be Manipulated:** There will be a great demand for goods during the festival season when compared to previous periods. Suppose this inventory turnover ratio is considered for decision-making, the results get distorted. It is necessary to take the average inventories to present a fair view of the business activity.

Despite certain limitations, ratio analysis continues to be a powerful tool for analysis and interpretation of financial statements.

6.5. Classification of Ratios

For the purpose of financial performance analysis, ratios are classified into the following categories.

A. Liquidity (Short-term Solvency) Ratios

Formula

$$1. \text{ Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

Current Assets

Cash in hand and Bank, Stock, Sundry Debtors, Bills Receivable, Short-term Investments, Marketable Securities, Accrued Incomes, Prepaid Expenses.

Current Liabilities

Sundry creditors, bills payable, Bank overdraft, outstanding expenses, income received in advance, income tax provisions, bad debts provisions, dividend payable, any other account which is payable in short period.

2. Quick Ratio or Liquid Ratio or Acid Test Ratio

$$\text{Acid Test Ratio} = \frac{\text{Quick Assets}}{\text{Quick Liabilities}} \text{ (or) } \frac{\text{Liquid Assets}}{\text{Liquid Liabilities}} \text{ (or) } \frac{\text{LA}}{\text{CL}}$$

Quick assets or liquid assets = All current assets except stock

Quick Liabilities or liquid liabilities = All current liabilities except bank overdraft

$$3. \text{ Cash Position Ratio} = \frac{\text{Cash} + \text{Marketable Securities}}{\text{Current Liabilities}}$$

$$4. \text{ Net Working Capital Ratio} = \frac{\text{Net Working Capital}}{\text{Net Assets}}$$

Net Working Capital = Current assets – Current liabilities

$$5. \text{ Solvency Ratio} = \frac{\text{Outside Liabilities}}{\text{Total Assets}}$$

B. Long-term Solvency Ratios

$$1. \text{ Debt-Equity Ratio} = \frac{\text{Debt}}{\text{Equity}} \text{ (or) } \frac{\text{External Equities}}{\text{Internal Equities}} \text{ (or) } \frac{\text{Outsider's Fund}}{\text{Shareholder's Fund}}$$

External Equities refer to the total outside liabilities. The term internal equities refers to all claims of preference shareholders and equity shareholders such as share capital reserves and surplus. Outsider's fund refers to all short-term debts like mortgage, bills, etc.

Computation of long-term financial ratios, the term debt, like debentures are to be considered.

Acceptable norm for this ratio is considered to be 2:1.

$$2. \text{ Proprietary Ratio} = \frac{\text{Shareholder's Fund}}{\text{Total Assets}} \text{ (or) } \frac{\text{Shareholder's Fund}}{\text{Total Tangible Assets}}$$

Shareholder's fund includes Preference share capital, Equity share capital, Reserves surplus, Profit & Loss Account Balance if any.

Total Assets

Total assets represent all assets including goodwill. But total tangible assets means total assets minus goodwill, Profit & Loss A/c (Debit) Balance, Preliminary Expenses.

$$3. \text{ Ratio of fixed assets to proprietor's fund} = \frac{\text{Fixed Assets}}{\text{Proprietor's Fund}}$$

[Fixed assets are valued at original cost of the assets less depreciation]

$$4. \text{ Current assets to proprietor's fund Ratio} = \frac{\text{Current Assets}}{\text{Proprietor's Fund}}$$

C. Profitability Ratios

$$1. \text{ Gross Profit Ratio} = \frac{\text{Gross Profit}}{\text{Sales}} \times 100$$

$$2. \text{ Net Profit Ratio} = \frac{\text{Net Profit}}{\text{Sales}} \times 100$$

$$3. \text{ Operating Ratio} = \frac{\text{Cost of Goods Sold} + \text{Operating Expenses}}{\text{Sales}} \times 100$$

Cost of Goods Sold = Sales – Gross Profit

Operating Expenses = All the expenses debited in the Profit & Loss A/c except Financial Expenses, i.e. Administrative Expenses, Selling & Distribution Expenses, Financial Expenses.

Financial expenses may or may not include the Operating expenses.

$$4. \text{ Return on Capital Employed} = \frac{\text{Return}}{\text{Capital Employed}} \times 100$$

Return: Net Profit

Capital employed: Shareholders fund + Long-term liabilities

(or)

Fixed assets + Current Assets – Current liabilities

$\frac{\text{Profit before Tax and Interest}}{\text{Capital Employed}}$

$$5. \text{ Operating Profit Ratio} = \frac{\text{Operating Profit}}{\text{Net Sales}} \times 100$$

Notes

$$\text{Operating Profit} = \text{Net Profit} + \text{Non-Operating Expenses} - \text{Non-Operating Income}$$

Notes

$$6. \quad \text{Return on Total Assets} = \frac{\text{Return}}{\text{Total Assets}} \times 100$$

[Return = PAT]

$$7. \quad \text{Return on Shareholder Return} = \frac{\text{Return}}{\text{Shareholder's Fund}} \times 100$$

$$8. \quad \text{Dividend Payout Ratio} = \frac{\text{Dividend Per Share}}{\text{Earning Per Share}}$$

$$9. \quad \text{Dividend Per Share} = \frac{\text{Dividend paid to Equity Shareholders}}{\text{No. of Equity Shares}}$$

$$10. \quad \text{Earning Per Equity Share} = \frac{\text{Profit Available to Equity Shares}}{\text{No. of Equity Shares}}$$

$$11. \quad \text{Dividend Yield} = \frac{\text{Dividend Per Share}}{\text{Market Price Per Share}}$$

$$12. \quad \text{Price Earning Ratio} = \frac{\text{Market Price of a Share}}{\text{Earning Per Share}}$$

$$13. \quad \text{Fixed Interest Coverage} = \frac{\text{Operating Income}}{\text{Annual Interest Expenses}}$$

$$14. \quad \text{Interest Coverage Ratio} = \frac{\text{EBIT}}{\text{Fixed Interest Expenses}}$$

D. Activity or Turnover Ratios

$$1. \quad \text{Stock Turnover Ratio} = \frac{\text{Cost of Goods Sold}}{\text{Average Stock}}$$

$$2. \quad \text{Debtors Turnover Ratio or Debtors Velocity} = \frac{\text{Debtors} + \text{Bills Payable}}{\text{Credit Sales}} \times \text{No. of Working Days}$$

$$3. \quad \text{Creditors' Turnover Ratio} = \frac{\text{Creditors} + \text{Bills Payable}}{\text{Credit Purchase}} \times 365$$

$$4. \quad \text{Average Payment Period} = \frac{\text{Account Payable}}{\text{Net Credit Purchase}} \times 365$$

$$5. \quad \text{Working Capital Turnover Ratio} = \frac{\text{Cost of Sales}}{\text{Net Fixed Assets}}$$

$$6. \quad \text{Fixed Assets Turnover Ratio} = \frac{\text{Cost of Sales}}{\text{Net Working Capital}}$$

$$7. \quad \text{Total Capital Turnover Ratio} = \frac{\text{Cost of Sales}}{\text{Total Capital Employed}}$$

$$8. \quad \text{Capital Turnover Ratio} = \frac{\text{Cost of Sales}}{\text{Net Working Capital}}$$

$$9. \quad \text{Current Assets Turnover Ratio} = \frac{\text{Cost of Sales}}{\text{Current Assets}}$$

$$10. \quad \text{Sales to Net worth Ratio} = \frac{\text{Cost of Sales}}{\text{Net Worth}}$$

$$11. \quad \text{Expenses Ratio} = \frac{\text{Individual Expenses}}{\text{Sales}}$$

E. Leverage or Capital Structure Ratios

1. $\text{Debt-Equity Ratio} = \frac{\text{Debt}}{\text{Equity}}$
2. $\text{Proprietary Ratio} = \frac{\text{Shareholder's Fund}}{\text{Total Assets}}$
3. $\text{Capital Gearing Ratio} = \frac{\text{Fixed Interest Bearing Securities}}{\text{Equity Share Capital}}$
(or)

$$= \frac{\text{Pre Share Capital} + \text{Debentures} + \text{Other Borrowed Funds}}{\text{Equity}}$$
4. $\text{Reserves to Equity Capital Ratio} = \frac{\text{Revenue Reserve}}{\text{Equity Capital}}$
5. $\text{Fixed Assets to Net Worth Ratio} = \frac{\text{Fixed Assets}}{\text{Net Worth}}$
6. $\text{Current Assets to Net Worth Ratio} = \frac{\text{Current Assets}}{\text{Net Worth}}$
7. $\text{Current Liabilities to Net Worth Ratio} = \frac{\text{Current Liabilities}}{\text{Net Worth}}$
8. $\text{Fixed Assets to Current Assets Ratio} = \frac{\text{Fixed Assets}}{\text{Current Assets}}$
9. $\text{Fixed Assets Ratio} = \frac{\text{Fixed Assets}}{\text{Long-term Funds}}$

Notes**Illustrations and Solutions****Type I : Final Account to Ratio***Illustrations 1: From the data calculate:*

- (i) Gross Profit Ratio (ii) Net Profit Ratio (iii) Return on Total Assets
 (iv) Inventory Turnover (v) Working Capital Turnover
 (vi) Net Worth to Debt

Sales	25,20,000	Other Current Assets	7,60,000
Cost of Sale	19,20,000	Fixed Assets	14,40,000
Net Profit	3,60,000	Net worth	15,00,000
Inventory	8,00,000	Debt.	9,00,000
		Current Liabilities	6,00,000

Solution :

$$(i) \quad \text{Gross Profit Ratio} = \frac{\text{GP}}{\text{Sales}} \times 100 = \frac{6,00,000}{25,20,000} \times 100 = 23.81\%$$

$$\text{Sales} - \text{Cost of Sales} = \text{Gross Profit}$$

$$25,20,000 - 19,20,000 = 6,00,000$$

$$(ii) \quad \text{Net Profit Ratio} = \frac{\text{NP}}{\text{Sales}} \times 100 = \frac{3,60,000}{25,20,000} = 14.28\%$$

$$(iii) \quad \text{Inventory Turnover Ratio} = \frac{\text{Turnover}}{\text{Inventory}} \times 100 = \frac{19,20,000}{8,00,000}$$

= 2.4 times

Turnover Refers Cost of Sales

$$(iv) \quad \text{Return on Total Assets} = \frac{\text{NP}}{\text{Total Assets}} = \frac{3,60,000}{30,00,000} \times 100 = 12\%$$

$$\text{FA} + \text{CA} + \text{inventory} [14,40,000 + 7,60,000 + 8,00,000] = 30,00,000$$

$$(v) \quad \text{Net worth to Debt} = \frac{\text{Net Worth}}{\text{Debt}} = \frac{15,00,000}{9,00,000} \times 100 = 1.66 \text{ times}$$

$$(vi) \quad \text{Working Capital Turnover} = \frac{\text{Turnover}}{\text{Working Capital}}$$

$$\text{Working Capital} = \text{Current Assets} - \text{Current Liabilities}$$

$$= 8,00,000 + 7,60,000 - 6,00,000$$

$$15,60,000 - 6,00,000 = 9,60,000$$

$$\text{Working Capital Turnover Ratio} = \frac{19,20,000}{9,60,000} = 2 \text{ times.}$$

Illustration 2: Calculate the following ratios from the balance sheet given below:

(i) Debt-Equity Ratio

(ii) Liquidity Ratio

(iii) Fixed Assets to Current Assets

(iv) Fixed Assets Turnover

Balance Sheet

Liabilities	(₹)	Assets	(₹)
Equity Shares or ₹ 10 each	1,00,000	Goodwill	60,000
Reserves	20,000	Fixed Assets	1,40,000
P & L A/c	30,000	Stock	30,000
Secured Loan	80,000	Sundry Debtors	30,000
Sundry Creditors	50,000	Advances	10,000
Provision for Taxation	20,000	Cash Balance	30,000
	3,00,000		3,00,000

The sales for the year were ₹ 5,60,000.

Solution:

$$(i) \quad \text{Debt - Equity Ratio} = \frac{\text{Long - term Debt}}{\text{Shareholder's Fund}}$$

$$\text{Long-term Debt} = \text{Secured loan ₹ 80,000}$$

$$\text{Shareholder's Fund} = \text{Equity Share Capital} + \text{Reserves} + \text{P \& L A/c}$$

$$= 1,00,000 + 20,000 + 30,000 = 1,50,000$$

$$\text{Debt-Equity Ratio} = \frac{80,000}{1,50,000} = .53$$

$$(ii) \quad \text{Liquidity Ratio} = \frac{\text{Liquid Assets}}{\text{Liquid Liabilities}}$$

$$\text{Liquid Assets} = \text{Sundry Debtors} + \text{Advances} + \text{Cash Balance}$$

$$= 30,000 + 10,000 + 30,000 = 70,000$$

$$\text{Liquid Liabilities} = \text{Provision for Taxation} + \text{Sundry Creditors}$$

$$= 20,000 + 50,000 = 70,000$$

$$\text{Liquid Ratio} = \frac{70,000}{70,000} = 1$$

Notes

$$= \frac{\text{Fixed Assets}}{\text{Current Assets}} = \frac{1,40,000}{1,00,000} = 1.4$$

$$(iv) \quad \text{Fixed Assets Turnover} = \frac{\text{Turnover}}{\text{Fixed Assets}} = \frac{5,60,000}{1,40,000} = 4$$

Illustration 3: From the following particulars pertaining to Assets and Liabilities of a company calculate:

(a) Current Ratio

(b) Liquidity Ratio

(c) Proprietary Ratio

(d) Debt-equity Ratio

(d) Capital Gearing Ratio

Liabilities	(₹)	Assets	(₹)
5000 equity shares ₹ 10 each	5,00,000	Land & Building	6,00,000
8% 2000 per shares ₹ 100 each	2,00,000	Plant & Machinery	5,00,000
9% 4000 Debentures of ₹ 100 each	4,00,000	Debtors	2,00,000
Reserves	3,00,000	Stock	2,40,000
Creditors	1,50,000	Cash and Bank	55,000
Bank Overdraft	50,000	Prepaid Expenses	5,000
	16,00,000		16,00,000

Solution:

$$(i) \quad \text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

$$\begin{aligned} \text{Current Assets} &= \text{Stock} + \text{Cash} + \text{Prepaid Expenses} + \text{Debtors} \\ &= 2,40,000 + 55,000 + 5,000 + 2,00,000 \\ &= 5,00,000 \end{aligned}$$

$$\begin{aligned} \text{Current Liabilities} &= \text{Creditors} + \text{Bank Overdraft} \\ &= 1,50,000 + 50,000 = 2,00,000 \\ &= \frac{5,00,000}{2,00,000} = 2.5 : 1 \end{aligned}$$

$$(ii) \quad \text{Liquid Ratio} = \frac{\text{Liquid Assets}}{\text{Liquid Liabilities}}$$

$$\begin{aligned} \text{Liquid Assets} &= \text{Cash and Bank} + \text{Debtors} \\ &= 55,000 + 2,00,000 = 2,55,000 \end{aligned}$$

$$\text{Liquid Liabilities: Creditors} = 1,50,000$$

$$\text{Liquid Ratio} = \frac{2,55,000}{1,50,000} = 1.7 : 1$$

$$(iii) \quad \text{Proprietary Ratio} = \frac{\text{Proprietor's Fund}}{\text{Total Tangible Assets}}$$

$$\begin{aligned} \text{Proprietor's Funds} &= \text{Equity Share Capital} + \text{Preference Share Capital} + \text{Reserves and Surplus} \\ &= 5,00,000 + 2,00,000 + 3,00,000 \end{aligned}$$

$$\text{Proprietary Ratio} = \frac{10,00,000}{16,00,000} = 0.625 : 1$$

Notes

Notes

$$(iv) \quad \text{Debt-Equity Ratio} = \frac{\text{External Equities}}{\text{Internal Equities}}$$

$$\text{External Equities} = \text{Long-term Liabilities} + \text{Short-term Liabilities}$$

$$= 4,00,000 + 2,00,000 = 6,00,000$$

$$\text{Internal Equities} = \text{Proprietor's funds}$$

$$= \frac{6,00,000}{10,00,000} = 0.6 : 1$$

$$(v) \quad \text{Capital Gearing Ratio} = \frac{\text{Fixed Interest Bearing Securities}}{\text{Equity Share Capital} + \text{Reserves}}$$

Fixed Interest Bearing Securities = Preference Shares	2,00,000
Debentures	4,00,000
	6,00,000

$$= \frac{6,00,000}{8,00,000} = 0.75 : 1$$

Illustration 7: Calculate stock turnover ratio from the following information:

Opening Stock	58,000
Purchases	4,84,000
Sales	6,40,000

Gross Profit Rate – 25% on Sales.

Solution:

$$\text{Stock Turnover Ratio} = \frac{\text{Cost of Goods Sold}}{\text{Average Stock}}$$

$$\text{Cost of Goods Sold} = \text{Sales} - \text{G.P.}$$

$$= 6,40,000 - 1,60,000 = 4,80,000$$

$$\text{Stock Turnover Ratio} = \frac{4,80,000}{58,000} = 8.27 \text{ times Ans.}$$

Here, there is no closing stock. So, there is no need to calculate the average stock.

Illustration 5: The following is the Trading and Profit and Loss account of Mathan Bros Private Limited for the year ended June 30, 2001.

		(₹)			(₹)
To Stock in hand		76,250	By Sales		5,00,000
To Purchases		3,15,250	By Stock in hand		98,500
To Carriage and Freight		2,000			
To Wages		5,000			
To Gross Profit		2,00,000			
		5,98,500			5,98,500
To Administration Expenses		1,01,000	By Gross profit		2,00,000
To Finance Expenses:			By Non-operating Incomes:		
Interest	1,200		Interest on Securities	1,500	
Discount	2,400		Dividend on Shares	3,750	
Bad Debts	3,400	7,000	Profit on Sale of Shares	750	6,000
To Selling Distribution Expenses		12,000			

To Non-operating expenses					
Loss on sale of securities	350				
Provision for legal suit	1,650	2,000			
To Net profit		84,000			
		2,06,000			2,06,000

Notes

You are required to calculate:

- (i) Gross Profit Ratio (ii) Expenses Ratio (individual)
 (iii) Net Profit Ratio (iv) Operating Profit Ratio
 (v) Operating Ratio (vi) Stock Turnover Ratio

Solution:

$$(i) \quad \text{Gross Profit Ratio} = \frac{\text{Gross Profit}}{\text{Sales}} \times 100 = \frac{2,00,000}{5,00,000} \times 100$$

$$(ii) \quad \text{Expenses Ratio} = \frac{\text{Individual Expenses}}{\text{Sales}}$$

$$(a) \quad \frac{\text{Administration Expenses}}{\text{Sales}} \times 100 = \frac{1,01,000}{5,00,000} \times 100$$

$$= 2.02\%$$

$$(b) \quad \frac{\text{Finance Expenses}}{\text{Sales}} \times 100 = \frac{7,000}{5,00,000} \times 100$$

$$= 1.40\%$$

$$(c) \quad \frac{\text{Selling and Distribution Expenses}}{\text{Sales}} \times 100 = \frac{12,000}{5,00,000} \times 100$$

$$= 2.40\%$$

$$(d) \quad \frac{\text{Non-operating Expenses}}{\text{Sales}} \times 100 = \frac{2,000}{5,00,000} \times 100$$

$$= 0.4\%$$

(iii) *Net Profit Ratio:*

$$\frac{\text{Net Profit}}{\text{Sales}} \times 100 = \frac{84,000}{5,00,000} \times 100 = 16.8\%$$

$$(iv) \quad \text{Operating Profit Ratio} = \frac{\text{Operating Profit}}{\text{Sales}} \times 100$$

$$\begin{aligned} \text{Operating Profit} &= \text{Net Profit} + \text{Non-operating Expenses} \\ &\quad - \text{Non-operating Incomes} \\ &= 84,000 + 2,000 - 6,000 = 80,000 \\ &= \frac{80,000}{5,00,000} \times 100 = 16\% \end{aligned}$$

$$(v) \quad \text{Operating Ratio} = \frac{\text{Cost of Goods Sold} + \text{Operating Expenses}}{\text{Sales}} \times 100$$

$$\text{Cost of Goods Sold} = \text{Sales} - \text{Gross Profit}$$

$$\text{i.e., } 5,00,000 - 2,00,000 = 3,00,000$$

Operating Expenses

All Expenses Debited in the Profit & Loss A/c Except Non-Operating Expenses [including Finance expense]

$$1,01,000 + 7,000 + 12,000 = 1,20,000$$

Notes

$$\text{Operating Ratio} = \frac{3,00,000 + 1,20,000}{5,00,000} \times 84\%$$

$$(vi) \quad \text{Stock Turnover Ratio} = \frac{\text{Cost of Goods Sold}}{\text{Average Stock}}$$

$$\text{Cost of Goods Sold} = 3,00,000$$

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

$$= \frac{76,250 + 95,500}{2} = 85,875$$

$$= \frac{3,00,000}{85,875} = 3.49 \text{ times}$$

Illustration 6: The following is the Trading account of M/s SKC Ltd. You are required to calculate the stock turnover Ratio.

To Opening Stock	7,960	By Sales	39,000
To Purchases	19,500	By Closing Stock	7,200
To Carriage inwards	500		
To Gross profit	18,240		
	46,200		46,200

Solution:

$$\text{Stock Turnover Ratio} = \frac{\text{Cost of Goods Sold}}{\text{Average Stock}}$$

$$\text{Cost of Goods Sold} = \text{Sales} - \text{Gross Profit}$$

$$= 39,000 - 18,240 = 20,760$$

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

$$= \frac{7,960 + 7,200}{2}$$

$$= 7,580$$

$$= \frac{20,760}{7,580} = 2.73 \text{ times}$$

Illustration 7: From the following figures calculate the creditors turnover ratio and the average age of accounts payable.

	₹
Credit Purchase During the year 1998	1,00,000
Creditors on 01.01.1998	20,000
Creditors on 31.12.1998	10,000
Bills Payable on 01.01.1998	4,000
Bills Payable on 31.12.1998	6,000

Solution:

$$\text{Creditors's Turnover Ratio} = \frac{\text{Net Credit Purchase}}{\text{Average Account Payable}} = \frac{1,00,000}{20,000}$$

$$= 5 \text{ times}$$

$$\text{Average Payment Period} = \frac{\text{Months}}{\text{Creditors Turnover}} = \frac{12}{5} = 2.4 \text{ months}$$

Type II: Ratio to Balance Sheet

Ratio Analysis

Illustration 8: From the following details find out

- (i) Current Assets (ii) Current Liabilities (iii) Liquid Assets
(iv) Stock

Current Ratio	2.5
Liquidity Ratio	1.5
Working Capital	₹ 60,000

Notes

Solution :

(1) Current Assets	–	Current Liabilities	=	Working Capital
↓		↓		↓
2.5	–	1.0	=	1.5
↓		↓		↓
1,00,000	–	40,000	=	60,000
(2) Liquid Ratio	:	Liquid Assets	:	Liquid Liabilities
		↓		↓
		1.5	=	1.00
		↓		↓
		60,000	=	40,000
				₹

Current Assets	1,00,000
Current Liabilities	40,000
Liquid Assets	60,000
Stock	40,000

NOTE:	(i) Here all Current Liabilities have been taken as Liquid Liabilities.
	(ii) Different between Current Assets and Liquid Assets is the stock.

Illustration 9: Calculate the current assets of a company from the following information:

- (i) Stock Turnover 5 times
(ii) Stock at the end is ₹ 5,000; more than the stock in the beginning
(iii) Sales (all credit) ₹ 2,00,000
(iv) Gross Profit Ratio 20%
(v) Current Liabilities ₹ 60,000
(vi) Quick Ratio 0.75.

Solution:

1. Cost of Goods Sold	+	G.P.	=	Sales
↓		↓		↓
80%	+	20%	=	100
↓		↓		↓
1,60,000	+	40,000	=	2,00,000

Notes

2. Stock Turnover Ratio = 5 times

$$\frac{\text{Cost of Goods Sold}}{\text{Average Stock (X)}} = 5 \text{ times}$$

$$X = \frac{1,60,000}{5} = 32,000$$

Average Stock = ₹ 32,000
 Full Stock Value = 32,000 × 2 = 64,000
 Less: Excess Value = 5,000

$$\frac{59,000}{2} = 29,500$$

Opening Stock = 29,500
 Closing Stock = 29,500 + 5,000 = 34,500

3. Quick Ratio

Quick Assets	:	Quick Liabilities
↓		↓
0.75	:	1.00
↓		↓
45,000	:	60,000
Current Assets		
		Closing Stock = 34,500
		Quick Assets = 45,000
		<u>79,500</u>

Illustration 10: From the following information prepare a Balance sheet and show the working.

- | | |
|--------------------------------------|---|
| (i) Working Capital: ₹ 75,000 | (v) Liquid Ratio: 1.15 |
| (ii) Reserve and Surplus: ₹ 1,00,000 | (vi) Long-term Liabilities: Nil |
| (iii) Bank Overdraft: ₹ 60,000 | (vii) Fixed Assets to proprietor's Fund: 0.75 |
| (iv) Current Ratio: 1.75 | |

Solution:

1. Current Assets	–	Current Liabilities	=	Working Capital
1.75	–	1.00	=	0.75
↓		↓		↓
1,75,000	–	1,00,000	=	75,000
2. Proprietor's Fund	–	Fixed Assets	=	Working Capital
↓		↓		↓
1.00	–	0.75	=	0.25
↓		↓		↓
3,00,000	–	2,25,000	=	75,000

3. Liquid Ratio

Liquid Assets : Liquid Liabilities

1.15 – 1.00

↓

↓

46,000 – 40,000

Current Liabilities 1,00,000 Current Assets 1,75,000

Less: BOD 60,000 Liquid Assets 46,000

Liquid Liabilities 40,000 Stock 1,29,000

Balance Sheet

Liabilities	(₹)	Assets	(₹)
Share Capital (3,00,000 – 1,00,000)	2,00,000	Fixed Assets	2,25,000
Reserves and Surplus	1,00,000	Stock	1,29,000
Bank Overdraft	60,000	Other Current Assets	46,000
Sundry Creditors (1,00,000 – 60,000)	40,000		
	4,00,000		4,00,000

Notes

Illustration 11: From the following information you are required to prepare a balance sheet:

Current Ratio	– 1.75
Liquid Ratio	– 1.25
Stock Turnover Ratio (Cost of Sales/Closing Stock)	– 9
Gross Profit Ratio	– 25%
Debt Collection Period	– 1½ months
Reserves and Surplus to Capital	– 0.2
Turnover of Fixed Assets	– 1.2
Capital Gearing Ratio	– 0.6
Fixed Assets to Net Worth	– 1.25
Sales for the year	– ₹ 12,00,000

Solution:

$$\begin{array}{rclcl}
 \text{(i) Cost of Goods Sold} & + & \text{Gross Profit} & = & \text{Sales} \\
 \downarrow & & \downarrow & & \downarrow \\
 75\% & - & 25\% & = & 100\% \\
 9,00,000 & + & 3,00,000 & = & 12,00,000
 \end{array}$$

(ii) Stock Turnover Ratio = 9

$$\frac{\text{Cost of Goods Sold}}{\text{Average Stock (X)}} = 9 \quad \frac{9,00,000}{X} = 9$$

$$X = \frac{9,00,000}{9}$$

$$\text{Stock} = 1,00,000$$

Notes

(iii) Current Ratio	1.75	3,50,000
Quick Ratio	1.25	2,50,000
Stock	0.50	1,00,000

(iv) Debt Collection Period = $1\frac{1}{2}$ months

$$\frac{\text{Debtors}}{\text{Sales}} \times 12 = 1.5$$

$$\text{Debtors} = 1,50,000$$

$$X = 12,00,000 \times \frac{1.5}{12}$$

$$\text{Debtors} = 1,50,000$$

(v) Turnover of Fixed Assets 1.2

$$\frac{\text{Turnover}}{(\text{X}) \text{ Fixed Assets}} = 1.2 = \frac{9,00,000}{X} = 1.2$$

$$X = \frac{9,00,000}{1.2}$$

$$\text{Fixed Assets} = 7,50,000$$

(vi) Fixed assets to : Net worth = 1.25 : 1

$$\begin{array}{ccc} \downarrow & & \downarrow \\ 1.25 & : & 1.00 \end{array}$$

$$\begin{array}{ccc} 7,50,000 & : & 6,00,000 \end{array}$$

(vii) Reserve and Surplus to Capital : 0.2 : 1

$$\text{Reserves} + \text{Share Capital} = \text{Net Worth}$$

$$0.2 + 1.00 = 1.2$$

$$\downarrow \quad \quad \quad \downarrow \quad \quad \quad \downarrow$$

$$1,00,000 + 5,00,000 = 6,00,000$$

$$\left[\frac{6,00,000}{1.2} \times 1 = 5,00,000 \right]$$

(viii) Capital Gearing Ratio

$$\frac{(\text{X}) \text{ Fixed Interest Bearing}}{\text{Equity Share Capital}} = 0.6$$

$$X = 5,00,000 \times 0.6$$

$$\text{Long-term Debt} = ₹ 3,00,000$$

Balance Sheet

Liabilities	(₹)	Assets	(₹)
Equity Share Capital	5,00,000	Fixed Assets	7,50,000
Long-term Debt	3,00,000	Current Assets	3,50,000
Reserves	1,00,000		
Current Liabilities	2,00,000		
	11,00,000		11,00,000

NOTE : Current Ratio

$$\text{Current Assets} : \text{Current Liabilities}$$

$$1.75 : 1.00$$

$$3,50,000 : 2,00,000$$

Problem 12: Following are the ratios to the trading activities of Indian Traders Ltd.

Ratio Analysis

Debtor's Velocity	3 months
Stock Velocity	8 months
Creditors Velocity	2 months
Gross Profit Ratio	25%

Notes

Gross Profit for the year ended 31.12.2001 amounts to ₹ 4,00,000. Closing stock of the year is ₹ 10,000 above the opening stock. Bills receivable are worth ₹ 25,000 and bills payable ₹ 10,000.

Find out (a) Sales (b) Sundry Debtors (c) Closing Stock and (d) Sundry Creditors.

Solution:

$$\begin{array}{rclcl}
 1. \text{ Cost of Goods Sold} & + & \text{Gross Profit} & = & \text{Sales} \\
 75\% & + & 25\% & = & 100\% \\
 \downarrow & & \downarrow & & \downarrow \\
 12,00,000 & + & 4,00,000 & = & 16,00,000
 \end{array}$$

2. Debtor's Velocity : 3 months

$$\begin{aligned}
 \frac{\text{Debtors}}{\text{Sales}} \times 12 &= 3, \text{ i.e., } \frac{X}{16,00,000} \times 12 = 3 \\
 &= 4,00,000
 \end{aligned}$$

$$\text{Less: Bills Receivable} = 25,000$$

$$\text{Sundry Debtors} = \underline{3,75,000}$$

3. Stock Velocity : 8 months

$$\frac{\text{Cost of Goods Sold}}{\text{Average Stock (X)}} \times 12 = 8 = \frac{12,00,000}{X} \times 12 = 8$$

$$X = 12,00,000 \times \frac{8}{12}$$

$$\text{Average Stock} = 8,00,000$$

$$\text{Total Stock Value } 8,00,000 \times 2 = 16,00,000$$

$$\text{Excess Stock} = 10,000$$

$$\underline{15,90,000}$$

$$\text{Opening Stock} = \underline{7,95,000}$$

$$7,95,000$$

$$\text{Closing Stock} = 7,95,000$$

$$\text{Excess Value} = 10,000 \quad 8,05,000$$

$$\underline{16,00,000}$$

4. Sundry Creditors

$$\text{Opening Stock} + \text{Purchase} - \text{Closing Stock} = \text{Cost of Goods Sold}$$

$$7,95,000 + x - 8,05,000 = 12,00,000$$

$$x = 12,00,000 + 8,05,000 - 7,95,000 = 12,10,000$$

5. Creditor's Velocity = 2 months

$$\frac{\text{Creditors + Bills Payable}}{\text{Purchase}} \times 12 = 2, \text{ i.e. } \frac{X}{12,00,000} \times 12 = 2$$

$$\text{Account Payable} = 2,01,667$$

$$\text{Less: Bills Payable} = 10,000$$

$$\text{Creditors} = 1,91,667$$

Notes

Illustration 13: With the help of the following Ratios regarding Narmatha Tex, draw the Trading, Profit and Loss A/c and Balance Sheet of the company for the year 2004.

- (i) Current Ratio : 2.5
- (ii) Liquidity Ratio : 1.5
- (iii) Net Working Capital : ₹ 3,00,000
- (iv) Stock Turnover Ratio : 6 times (Cost of Sales/Closing Stock)
- (v) Gross Profit Ratio : 20%
- (vi) Fixed Assets Turnover Ratio (on Cost of Sales) : 2 times
- (vii) Debt Collection Period : 2 months
- (viii) Fixed Assets to Shareholder's Net Worth : 0.80
- (ix) Reserves and Surplus to Capital: 0.5

Solution:

1. Current Assets	–	Current Liabilities	=	Working Capital
↓		↓		↓
2.5	–	1.00		1.5
↓		↓		↓
5,00,000		↓ 2,00,000		= 3,00,000

2. Current Ratio	2.5 →	5,00,000
Liquidity Ratio	1.5 →	3,00,000
Stock	<u>1.0</u> →	<u>2,00,000</u>

3. Stock Turnover Ratio : 6 times

$$\frac{(X) \text{ Cost of Goods Sold}}{\text{Closing Stock}} = 6, \text{ i.e., } \frac{X}{2,00,000} = 6$$

$$\text{Cost of Goods Sold} = 12,00,000$$

4. Cost of Goods Sold	+ G.P.	= Sales
80%	+ 20%	= 100%
12,00,000	+ 3,00,000	= 15,00,000

$$\left[\frac{12,00,000}{80} \times 20 \right] = 3,00,000$$

5. Debt Collection Period = 2 months

$$\frac{X \text{ Drs + BR}}{\text{Sales}} \times 12 = 2, \text{ i.e. } \frac{X}{15,00,000} \times 12 = 2$$

$$X = 15,00,000 \times \frac{2}{12}$$

$$\text{Debtors} + \text{BR} = 2,50,000$$

6. Fixed Assets Turnover Ratio

$$\frac{\text{Turnover}}{\text{Fixed Assets}} = 2, \text{ i.e. } \frac{12,00,000}{X} = 2$$

$$X = \frac{12,00,000}{2} = 6,00,000$$

7. Fixed Assets to Shareholder's Net worth = 0.80

$$\frac{\text{Fixed Assets (6,00,000)}}{\text{Shareholder's Net Worth (X)}} = 0.80$$

$$X = \frac{6,00,000}{0.80}$$

$$\text{Shareholder's Net Worth} = 7,50,000$$

8. Reserves and Surplus to capital: 0.5

$$\text{Reserves} + \text{Share Capital} = \text{Net worth}$$

$$0.50 + 1.00 = 1.50$$

↓

↓

↓

$$2,50,000 + 5,00,000 = 7,50,000$$

Balance Sheet

Liabilities	(₹)	Assets	(₹)
Share Capital	5,00,000	Fixed Assets	6,00,000
Reserves and Surplus	2,50,000	Current Assets	5,00,000
Current Liabilities	2,00,000		
Long-term Loan	1,50,000		
	11,00,000		11,00,000

Total Current Assets given: 5,00,000

Stock 2,00,000

Debtors 2,50,000

Cash 50,000

Illustration 14: From the following figures and ratios draw out Trading, Profit and Loss account and Balance Sheet.

Share Capital = 1,80,000

Working Capital = 63,000

Bank Overdraft = 10,000

There is no fictitious asset. In current assets there is no asset other than Stock debtors and cash. Closing stock is 20% higher than the opening stock.

Current Ratio : 2.5

Proprietary Ratio : 0.7

Stock Velocity : 4

Net Profit Ratio : 10% (to average Capital employed)

Notes

Notes

Quick Ratio : 1.5
Gross Profit Ratio : 20% to Sales
Debtor's Velocity : 365 days

Answer: Gross Profit ₹ 38,500, NP 23,950, B/s total 2,22,000

Illustration 15: You are given the following information pertaining to the Financial Statements of Reliance Ltd. as on 31.12.2004. On the basis of the information supplied, you are required to prepare Trading, Profit and Loss Account for the year ended and a Balance Sheet as on the date.

Net Current Assets : 2,00,000
Issued Share Capital : 6,00,000
Current Ratio : 1.8
Quick Ratio [Ratio of Debtors and Bank
Balance to Current Liabilities] : 1.35
Fixed Assets to Shareholder's Equity : 80%
Ratio of Gross Profit on Turnover : 25%
Net Profit to Issued Share Capital : 20%
Stock Turnover Ratio : 5 times
Average of Outstanding for the year : 36½ days

On 31.12.2004, the Current Assets consisted only of Stock Debtors and Bank Balance. Liabilities consisted of Share Capital, Current Liabilities and Assets consisted of Fixed Assets and Current Assets.

Solution:

1. Current Assets - Current Liabilities = Working Capital
1.8 : 1.00 : 0.8
4,50,000 - 2,50,000 = 2,00,000

2. Quick Ratio
Quick Assets : Current Liabilities
1.35 : 1.00
3,37,500 : 2,50,000

3. Stock
Current Assets - Quick Assets = Stock
4,50,000 - 3,37,500 = 1,12,500

4. Stock Turnover
$$\frac{\text{Cost of Goods Sold (X)}}{\text{Closing Stock (1,12,500)}} = 5$$
$$X = 1,12,500 \times 5 = 5,62,500$$

5. Ratio of Gross Profit on Turnover 25%
Cost of Goods Sold + G.P. = Sales
75% + 25% : 100%
5,62,500 + 1,87,500 : 7,50,000

6. Debtor's Turnover Ratio (Here there are no Bills Receivable.)

Ratio Analysis

$$\frac{\text{Drs}}{\text{Sales}} \times 365 = 36.5, \text{ i.e. } \frac{X}{7,50,000} \times 365 = 36.5$$

$$X = 7,50,000 \times \frac{36.5}{365}$$

Debtors = ₹ 75,000

7. Quick Assets (Debtors + Bank) = 3,37,500

Less: Debtors = 75,000

Cash in hand = 2,62,500

8. Net Profit to Issued Share Capital: 20%

20% : 100

↓ ↓
1,20,000 : 6,00,000

$$\left[\frac{6,00,000}{100} \times 20 \right] = 1,20,000$$

9. Fixed Assets

Fixed Assets to Shareholder's Equity, change into

Shareholder's equity – Fixed Assets = Net Current Assets

↓ ↓ ↓
100% – 80% = 20
10,00,000 – 8,00,000 = 2,00,000

$$\left[\frac{2,00,000}{20} \times 80 \right] = 8,00,000$$

Trading and Profit and Loss Account for the year ended

	(₹)		(₹)
To Cost of Goods Sold	5,62,500	By Sales	7,50,000
To Gross Profit	1,87,500		
	7,50,000		7,50,000
To Expenses	67,500	By Gross Profit	1,87,500
To Net Profit	1,20,000		
	1,87,500		1,87,500

Balance Sheet

Liabilities	(₹)	Assets	(₹)
Share Capital	6,00,000	Fixed Assets	8,00,000
Reserves and Surplus (B/F)	2,80,000	Current Assets:	
		Stock	1,12,500
		Debtors	75,000
		Bank	2,62,500
Profit for the year	1,20,000		
Current Liabilities	2,50,000		
	12,50,000		12,50,000

Notes

Notes

6.6. Summary

- Ratio analysis is an effective and suitable tool of financial analysis. Analysis of financial statement with the support of ratios would guide the management in important decision making, implementation and control. Ratio analysis is an instrument for diagnosing the financial health of an enterprise.
- Financial Statement contains the summary of one year's financial activities that is, application of Ratio as against the financial statements.
- Comparison among different divisions of the organisation is made easy with the help of various ratios.
- Ratios give suitable guidance to management for formulating various budgets and construct relevant policies and also to prepare the future plan of action.
- Comparison between two or more firms is more essential.

6.7. Review Questions

1. What is meant by Ratio Analysis?
2. List out the Liquidity Ratios.
3. What are Turnover Ratios?
4. What do you understand by Operating Ratios and Stock Turnover Ratio ?
5. Briefly explain the objectives of Ratio Analysis.
6. What are the Limitations Ratio Analysis?
7. Discuss some of the important ratios usually worked from the financial statements showing how they would be useful to top level management.
8. "Ratio analysis is a tool to examine the health of a business with a view to make the financial results more intelligible".
9. Discusses the significance of various accounting ratios in the analysis of financial statements.
10. Perfect Ltd. gives the following Balance Sheet. You are required to compute the following ratios.

(a) Liquid Ratio

(b) Solvency Ratio

(c) Debt-Equity Ratio

(d) Stock of Working Capital

Balance Sheet

Liabilities	(₹)	Assets	(₹)
Equity Share Capital	15,00,000	Fixed Assets	14,00,000
Reserve Fund	1,00,000	Stock	5,00,000
6% Debentures	3,00,000	Debtors	2,00,000
Overdraft	1,00,000	Cash	1,00,000
Creditors	2,00,000		
	22,00,000		22,00,000

11. The Balance Sheet of Naronath & Co. as on 31.12.2000 shows as follows:

Liabilities	(₹)	Assets	(₹)
Equity capital	1,00,000	Fixed Assets	1,80,000
15% Preference shares	50,000	Stores	25,000
12% Debentures	50,000	Debtors	55,000
Retained Earnings	20,000	Bills Receivable	3,000
Creditors	45,000	Bank	2,000
	2,65,000		2,65,000

Notes

Comment on the Financial position of the Company, i.e. Debt-Equity Ratio, Fixed Assets Ratio, Current Ratio, Liquidity.

12. From the following details of a trader you are required to calculate :

- (i) Purchase for the year.
(ii) Rate of stock turnover
(iii) Percentage of Gross profit to turnover

Sales ₹	33,984	Stock at the close at cost price	1,814
Sales Returns	380	G.P. for the year	8,068
Stock at the beginning at cost price	1,378		

13. Calculate the operating Ratio from the following figures.

Items	(₹ in Lakhs)
Sales	17,874
Sales Returns	4
Other Incomes	53
Cost of Sales	15,440
Administration and Selling Exp.	1,843
Depreciation	63
Interest Expenses (Non-operating)	456

14. Suraj & Co. sells goods on cash as well as credit (though not on deferred instalment terms). The following particulars are extracted from their books of account for the calendar year 2004.

Total Gross Sales	= 1,00,000
Cash sales (included in above)	= 20,000
Sales Returns	= 7,000
Total Debtors for Sales on 31.12.2004	= 9,000
Bills Receivable on 31.12.2004	= 1,000
Provision for Doubtful Debts on 31.12.2004	= 1,000
Total Creditors 31.12.2004	= 10,000

Calculate the Average Collection Period.

Notes

15. The Balance Sheet of Lal and Co. on 31.12.2000 shows the following details:

	(₹)
Cash	9,500
Marketable Securities	15,000
Inventories	1,00,000
Debtors	85,000
Prepaid Expenses	5,000
Long-term Loans	1,06,000
Trade Creditors	64,000
Income Tax Payable	9,000
Accrued Expenses	12,000

You are required to compute

- (i) Current Ratio (ii) Acid-Test Ratio
16. From the data given below compute:
- (a) Working Capital (b) Net Capital Employed (c) Current Ratio
- (d) Acid Test Ratio (e) Debt-Equity Ratio
- (f) Fixed Assets Ratio

Balance Sheet of Butterfly Ltd. as on 31st December

Liabilities	(₹)	Assets	(₹)
Equity Share Capital	25,000	Fixed Assets	30,000
Preference Share Capital	5,000	Current Assets: Stores	2,000
Reserve and Surplus	4,000	Sundry Debtors	1,000
Debentures	8,000	Cash	500
Bank Loan	4,000	Bank	2,500
Sundry Creditors	1,000	preliminary Expenses	8,000
Proposed Dividends	1,000	Brokerage on Shares	2,000
Provision for Taxation	2,000	Stock	4,000
	50,000		50,000

17. From the following details, prepare Balance Sheet of Moorthy Ltd., with as many details as possible.
- (i) Stock Velocity: 6.
- (ii) Capital Turnover Ratio: 2.
- (iii) Fixed Asset Turnover Ratio: 4.
- (iv) Gross Profit Turnover Ratio: 20%.
- (v) Debtor's Velocity: 2 months.
- (vi) Creditors Velocity: 73 days.
- (vii) Gross Profit was ₹ 60,000.
- (viii) Reserves and Surplus ₹ 20,000.
- (ix) Closing Stock was ₹ 5,000 in Excess of Opening Stock.

18. From the following information, prepare a Balance sheet as on 31.3.2003:

- (i) Working Capital ₹ 1,20,000
- (iv) Assets (Fixed) – Proprietary Ratio 0.75: 1
- (ii) Reserves and Surplus ₹ 80,000
- (v) Liquid Ratio 1.5
- (iii) Bank Overdraft 20,000
- (vi) Current Ratio 2.5.

Notes

19. From the following particulars prepare the Balance Sheet of ABC Limited.

- (i) Sales for the year ₹ 20,00,000
- (ii) Gross Profit Ratio 25%
- (iii) Current Ratio: 1.50
- (iv) Quick (cash Drs) Ratio: 1.25
- (v) Stock Turnover Ratio: 15
- (vi) Debt Collection Period: 1½ months
- (vii) Turnover to Fixed Assets: 1.5
- (viii) Fixed Assets to Net Worth: 5/6 (0.83)
- (ix) Ratio of Reserves to Share Capital 1/3 (0.33) [The term turnover refers to cost of sales and stock refers to closing stock].

20. Using the information and the form given below compute the Balance Sheet items for a firm having a sale of ₹ 36 lakhs.

Sales/Total Assets	3	Sales/Debtors	15
Sales/Fixed Assets	5	Current Ratio	2
Sales/ Current Assets	7.5	Total Assets/Net worth	2.5
Sales/Inventories	20	Debt Equity	1

Balance Sheet

Liabilities	(₹)	Assets	(₹)
Net Worth	***	Fixed Assets	***
Long-term Debt	***	Inventories	***
Current Liabilities	***	Debtors	***
		Liquid Assets	***
		Current Assets	***

21. From the following information compute the Balance Sheet

Total Assets/Net Worth	=	3.5
Sales to Fixed Assets	=	6
Sales to Current Assets	=	8
Sales to Inventory	=	15
Sales to Debtors	=	18
Current Ratio	=	2.5
Annual Sales	=	₹ 25,00,000

Notes

22. From the following information prepare a Balance Sheet with as many details as possible.

Liabilities	(₹)	Assets	(₹)
Gross Profit	₹ 80,000	Current Assets	₹ 1,50,000
Gross Profit to Cost of Goods Sold Ratio	1/3	Account Payable Velocity	90 days
Stock Velocity	6 times	Bills Receivable	20,000
Opening Stock	₹ 36,000	Bills Payable	₹ 5,000
Account Receivable velocity (Year.360 days)	72 days	Fixed Assets Turnover Ratio	8 times

Note: Turnover refers to Cost of Sales

23. From the following information presented by a firm for the year ended 31st December, find out:

- | | |
|----------------------------------|--------------------------|
| (i) Net Worth | (ii) Current Liabilities |
| (iii) Total Debt to Net Worth | (iv) Long-term Debt |
| (v) Current Assets | (vi) Stock |
| (vii) Debtors and | (viii) Fixed Assets |
| Sales to Net Worth | : 5 times |
| Current Liabilities to Net worth | : 50% |
| Total Debts to Net Worth | : 60% |
| Current Ratio | : 2 |
| Sales to Stock | : 10 times |
| Debtor's Velocity | : 9 times |
| Annual Sales | : ₹ 15,00,000 |
| Cash Sales | : 40% of Sales |

24. With the following Ratios and further information given below, prepare Trading, Profit and Loss A/c and a Balance Sheet of Shri Surjit & Co.

- | | |
|---|---------------|
| (i) Gross Profit Ratio | : 25% |
| (ii) Net Profit/Sales | : 20% |
| (iii) Stock Turnover Ratio | : 10 |
| (iv) Net Profit Capital | : 1/5 |
| (v) Capital to Total Liabilities | : 1/2 |
| (vi) Fixed Assets/Capital | : 5/4 |
| (vii) Fixed Assets/Total Current Assets | : 5/7 |
| (viii) Fixed Assets | : ₹ 10,00,000 |
| (ix) Closing Stock | : ₹ 1,00,000 |

25. The following are the Ratios and other details of Rubix Ltd.:

- | | |
|---------------------|------------|
| Debtor's Velocity | : 3 months |
| Creditor's Velocity | : 2 months |

Stock Turnover	: 8 times
Capital – Turnover Ratio	: 2.5 times
Fixed Assets – Turnover Ratio	: 8 times
Gross Profit Turnover Ratio	: 25%

Notes

Gross Profit in a year amounts to ₹ 80,000. There is no Long-term Loan or Overdraft. Reserves and Surplus amount to ₹ 28,000. Liquid Assets are ₹ 97,333. Closing Stock of the year is ₹ 2,000 more than the Opening Stock. Bills Receivable amount to ₹ 5,000 and Bills Payable to ₹ 2,000.

Find out:

- | | |
|------------------------|------------------------|
| (i) Sales | (ii) Sundry Debtors |
| (iii) Sundry Creditors | (iv) Closing Stock |
| (v) Fixed Assets | (vi) Proprietor's Fund |

Construct the Balance Sheet with as many details as possible.

26. From the following information of a Textile Company complete the Proforma Balance Sheet if Sales are worth ₹ 28,00,000.

Sales to Net worth	= 2.3 times
Current Debt to Net worth	= 42%
Total Debt to Net worth	= 75%
Current Ratio	= 2.9 times
Net Sales to Inventory	= 4.7 times
Average Collection Period	= 64 days
Fixed Assets to Net worth	= 53.2%

Proforma Balance Sheet

Net worth	?	Fixed Assets	?
Long-term Debt	?	Cash	?
Current Debt	?	Stock	?
		Sundry Debtors	?

27. Calculate Stock Turnover Ratio from the following details :

- Opening Stock ₹ 29,000
- Closing Stock ₹ 31,000
- Sales ₹ 3,20,000
- Gross Profit – Ratio 25% on sales

Cost and Management Accounting

Notes

Structure

- 7.1. Cost Management—An Introduction
- 7.2. Cost Management System
- 7.3. Cost Accounting
- 7.4. Management Accounting
- 7.5. Cost Accounting vs. Financial Accounting
- 7.6. Cost Accounting vs. Management Accounting
- 7.7. Management Accounting vs. Financial Accounting
- 7.8. Summary
- 7.9. Review Questions

7.1. Cost Management—An Introduction

Cost Management may be defined as collection, measurement, classification and reporting the information to the managers in costing for planning, controlling, and decision-making. It produces information regarding the costing for internal users and it is associated with management accounting.

Traditional cost accounting deals with determining the cost of inventory and goods manufactured. In conventional cost accounting, cost are classified in terms of functions as manufacturing, administration, selling and distribution. But cost management includes all functions of cost accounting to cope the new aspects of production methods as well as product with changed scenario. The cost accountant is taking on a new role, one with broader implications and less narrow definition. It is in this way that cost accounting is evolving into cost management. Cost management uses new methods of guiding and monitoring performance along with traditional costing techniques.

Cost accounting conventionally focuses on historical analysis of cost data and business enterprises and managers use these analyses for making their decisions, but cost management does not avoid new activities, risky programmes, or new technology. The cost-management approach is replacing the cost accounting view of a single site, single mix of cost behaviour with a broader examination of how cost interrelationships can be managed to improve profits.

Advantages of Cost Management

Cost management has the following advantages:

1. It helps organisation to manage costs proactively.

2. It provides techniques and tools for supervision and operations.
3. Cost management is required for cost based strategic planning.
4. It helps in increasing resource productivity and margins.
5. It facilitates systematic and regular monitoring of performance against plans and standards.
6. It helps to see the relationship among various costs and analyse the same cost in multiple ways that a manager is able to plan more effectively and measure performance accurately.
7. It helps to make accurate cost projections.

7.2. Cost Management System

Business entities face two major challenges nowadays, one is achieving profitability in the short run and other is maintaining a competitive position in the long run. A Cost Management System (CMS) consists of a set of formal methods, developed for planning and controlling an organisation's cost generating activities relative to its short-term objectives and long-term strategies. Cost Management System has following goals:

1. Control costs
2. Measure performance
3. Assess product or/and service life-cycle performance
4. Develop reasonably accurate product costs
5. Improve understanding of processes and activities
6. Allow the pursuit of organisational strategies.

7.3. Cost Accounting

Cost Accounting is the process of accounting for cost from the point at which expenditure is incurred or committed to the establishment of its ultimate relationship which cost centres and cost units.

—ICMA, London

Costing is the classifying, recording and appropriate allocation of expenditures for the determination of the cost of products of services and for the presentation of suitably arranged data for the purpose of control and guidance of the management. It includes the ascertainment of the cost of every order, job, contract, process, service or unit as may be appropriated. It deals with the cost of production, selling and distribution.

—Harold, J. Wheldon

Objectives

The main objectives of cost accounting are mentioned below:

1. To aid in the development of long range plans by providing cost data that acts as a basis for projecting data for planning.
2. To ensure efficient cost control by communicating essential data about costs at regular intervals.
3. To determine cost of products or activities.

Notes

4. To identify profitable areas of business.
5. To provide information to management in connection with various operational problems.

Advantages

1. Actual cost data can be obtained and compared with standard cost within the firm or industry.
2. It helps management in knowing the cost of different alternatives and selecting the most advantageous course of action.
3. With the help of cost accounting, more accurate and reliable financial accounts can be prepared promptly for the use of management.
4. It provides cost data and information to determine the price of the product.
5. It helps in improving or changing the production methods whenever necessary.
6. It provides data about profitable and unprofitable products and activities.
7. It ensures maximum utilisation of physical and human resources, checks frauds and manipulation.
8. It helps employee as well as the employer in their basic goal to get higher earning and maximising the profits of the concern.

7.4. Management Accounting

Management accounting was not known to the business world until, 1950. This term was firstly described in a report entitled, 'Management Accounting' in 1950, which was published by the Anglo-American Council of Productivity Management Accounting Team after its visit to United States during April, May and June, 1950, presented a report which defines Management accounting as:

"Preparation of accounting information in such a way as to assist management in the creation of policy and in day-to-day operation of an undertaking".

Management accounting is a segment of accounting that deals specifically with the accounting and reporting of information to management, regarding the detailed operation of the company in order for decisions to be taken in various areas of business. It is oriented primarily towards managerial control and other decision-making groups inside the organisation.

Definitions

"Management accounting is the application of appropriate techniques and concepts in processing historical and projected economic data of an entity to assist management in establishing plans for reasonable economic objectives in the making of rational decisions with a view towards these objectives."

—American Accounting Association

"Management accounting is the term used to describe the accounting methods, system and techniques which, coupled with special knowledge and ability, assist management in its task of maximum profits or minimizing losses."

—J. Batty

"Management accounting is concerned with accounting information which is useful to management".
—Robert N. Anthony

Cost and Management
Accounting

"Management accounting is the adaption and analysis of accounting information and its diagnosis and explanation in such a way as to assist management"

—T.G. Rose

Notes

As conclusion, management accounting may be defined as: "Management accounting is a system of presentation an analysis of historical accounting data and other information to draw logical conclusion for the purpose of efficient formulation, execution and appraisal of a business plans. Management accounting may also be considered as a discipline which deals with the collection of relevant financial data and other information for the purpose of analysis and interpretation to arrive at some conclusion which may be used in developing necessary business plans and finally evaluate the effectiveness of those plans and take corrective action, wherever required. Management accounting is a system for gathering, summarising, reporting and interpreting accounting data and other financial information primarily for the internal needs of management.

Objectives

Some important objectives of management accounting are as follows:

1. The basic objective of management accounting is to assist to management to make it more efficient.
2. Management accounting makes use of various accounting and statistical measures to represent the accounting and other information in the most suitable form that management could take decision conveniently.
3. Under management accounting, the accounting information are analysed for better understanding and decision-making.
4. Management accounting helps the management in envisaging and formulation realistic plans.
5. Management accounting is not only concerned with plan formulation and decision-making but also deals with measuring the execution of the plans.

Scope

1. **Inflation Accounting:** Inflation accounting attempts to identify certain characteristics of accounting that tend to distort the reporting of financial results during periods of rapidly changing prices. It implements appropriate methods to analyze and interpret the impact of inflation on the financial decisions.
2. **Quantitative Techniques:** Modern managers believe that the financial and economic data available for managerial decisions can be more useful when these data analysed with more sophisticated analysis and evaluation techniques. Quantitative analysis allows managers to develop information from their financial database. The techniques such as time series, regression analysis and sampling techniques are commonly used for this purpose. Further, managers also use techniques such as linear programming, game theory, queuing theory, etc. in their decision-making process.

Notes

3. **Information System:** Management accounting is an information system designed to communicate meaningful economic and financial information to the managers so that they may discharge their functions efficiently. The management accounting system consists of a number of tools and techniques which are frequently used by the management accountant to meet the increasing needs of the business.
4. **Budgeting:** It consists of capital budgeting and operational budgeting. Long-term investment decisions are made with the help of capital budgeting techniques which is concerned with the development of capital budgets and evaluation of capital expenditure proposals with a view to choose most one profitable. Operational budgeting system deals with the preparation of different types of budgets, such as cash budget, raw materials budget, sales budget, etc. These budgets are used for effective communication and control of business activities.
5. **Analysis of Financial Statement:** Financial statement analysis is well known set of systems and produce designs which are provided to decision-makers with relevant information derived from the basic sources of data such as company financial statement, government and industry publications. Various techniques have been delivered to analyze financial statement like as, comparative financial statement, common-size statement, ratio analysis, trend analysis and fund flow statement.
6. **Cost Accounting:** Cost accounting is a vital part of the accounting system. It includes the recording, classifying, analysis and reporting of all cost aspects of company performance. The cost accounting procedures have to be designed as per the nature and requirement of the firm and the data required at the different levels of management for effective cost control and cost reduction.

Advantages

Advantages of management accounting are as follows:

1. It increases the efficiency of the business operation.
2. It ensures efficient regulation of business activities by establishing efficient system of planning and budgeting.
3. It makes possible efficient utilisation of the available resources and thereby increase the return on capital employed.
4. It ensures effective control by comparing actual results with the standards.
5. It maintains a good public relation by providing quality service to the customers of the business.
6. It provides means to motivate the employees of the organisation.
7. It keeps management informed about the ongoing operations, enabling it to suggest remedial measures in case of deviations; and
8. It helps in evaluating the efficiency and effectiveness of the company's business policies with the incorporation of management audit.

Limitations

Management accounting suffers from the following limitations:

1. Management accounting uses data which are available from financial and costing statement. Thus, the validity of the decision depends on the reliability of the historical data as obtained from conventional financial statement. Any drawback in such statement affects the effectiveness of the decision.
2. The application of management accounting tools and techniques requires knowledge about various disciplines like accounting, economics, costing, taxation, statistics and mathematics, engineering, management, etc.
3. There is tendency among business executives to use short-cut approach to solve a managerial problem rather than lengthy process as required under scientific analysis of management accounting. The elements of intuition in managerial decision has not been completely eliminated.
4. Smaller concerns may not be able to afford it because the installation of management accounting system requires a heavy investment both in terms of money and manpower.
5. Management accounting is in the process of evolution and it has to go through many developmental processes before reaching a final stage. The techniques of management accounting lack sharpness and fluidity which is required of an efficient system even the analysis and interpretation considerably differs from firm to firm.
6. The management system cannot be replaced by a system of management accounting as the latter system simply provide the necessary data for a decision and not the decision itself.
7. The collection and analysis is considerably influenced by the personal bias of the management accounting, so the principle of objectivity is not followed in its real spirit in management accounting.

Notes

Importance

Management accounting has emerged as an important subject of great practical value in the modern complex business world. Any subject assumes special importance only when it contributes significantly in understanding and solving problems for achieving desired results.

Management accounting is very useful to a large-scale business enterprise which is confronted with so many business complexities of far-reaching consequences such as:

1. **Effective Planning:** Planning becomes efficient if it is done by properly using of the tools and techniques of management accounting. All the available financial and physical resources at the option of the management can be put to maximum use through efficient planning.
2. **Efficient Business Operations:** Measurement of performance and reporting to management brings efficiency in business operation as the departmental heads become more conscious of achieving planned targets and bring maximum efficiency in their work.

Notes

3. **Efficient Control:** Management accounting contributes greatly in developing efficient control mechanism in an organisation. Better planning, efficient method of communication and coordination, performance appraisal, etc. bring about an efficient control system which is very important for growth and development of an enterprise.
4. **Satisfaction of Customers:** The customers are better served if the Management accounting tools and techniques are rightly applied in controlling production —its volume, cost and quality. The customers are able to receive better quality of products at reasonable rates with assured supplies.
5. **Efficiency of Management:** Management is said to be efficient if it is able to develop realistic plans, implement plans as per schedule and evaluate the performance which is in true with the planned target.

7.5. Cost Accounting vs. Financial Accounting

The following are the points of differences between cost accounting and financial accounting:

1. **Nature:** Cost accounting classifies, records, presents and interprets in a significant manner that the material, labour and overhead cost involved in manufacturing and selling each product or service. On the other hand, financial accounting classifies, records, presents and interprets in terms of money, transactions and events that are of financial nature and provides management with the facts and figures necessary for the preparation of periodic financial statements (Balance sheet, etc.)
2. **Accounting System:** The data under cost accounting may be gathered for small or large segment or activities of an organisation, and monetary as well as other measures can be used for different activities in the firm. But financial accounting follows the double-entry system for recording, classifying, and summarising business transactions.
3. **Time Span:** Cost accounting presents reports or statements whenever needed. Reports may be prepared on a monthly, weekly, or even daily basis. Frequency of reports is determined by particular planning and controlling needs, objectives of cost control and cost determination. But financial accounting data and statements are developed for a definite period, usually yearly. It requires that financial statements be developed and presented at regular intervals of time.
4. **Accounting Principles:** Cost accounting is not bound to use the General Accepted Accounting Principles (GAAP). It can use in any acceptable technique or practice which generates useful information. On the other hand, financial accounting data is primarily meant for external users and GAAP which are important in financial accounting and are used extensively while recording, classifying, summarising and reporting business transactions.
5. **Unit of Measurement:** Information under cost accounting is in the terms of labour hours, machine hours and product units for the purpose of analysis and decision-making, but under financial accounting, all information in

terms of money, and it measures transactions that have already occurred in terms of money.

7.6. Cost Accounting vs. Management Accounting

Sometimes a distinction is also drawn between management accounting and cost accounting. We have already examined the nature of management accounting. Cost accounting is a specialised branch of accounting, which deals with maintenance of cost records for various inputs of costs, ascertainment of cost per unit of output, specification of standard cost for cost control and cost reduction, managerial costing volume and profit planning, etc. Management accounting is closely related to cost accounting as it uses cost accounting tools for management purposes. There appears to be no difference between cost accounting and management accounting in so far as the nature of costing tools and their object and methods of application is concerned. The only difference between the two lies in the fact that cost accounting exclusively deals with cost data whereas management accounting takes into account cost data, financial data and all other necessary information in its process of decision-making. The scope of management accounting is wider than all other forms of accounting.

Notes

7.7. Management Accounting vs. Financial Accounting

1. **Objective:** Basic objective of financial accounting is to keep proper records of all the business transactions which take place in an organisation so that the profit or loss for a particular period may be determined and the economic position on any point of time ascertained. On the other hand, the objective of management accounting is to design the accounting system in such a manner that it is helpful to management in decision-making.
2. **Nature:** Financial accounting is historical in nature. It deals with business events which have taken place in an organisation. On the other hand, management accounting is futuristic in nature as its main concern is planning and control of business activities.
3. **Sources of Data:** In financial accounting, the sources of information are the journal, sub-journals and ledger accounts which form the basis for drawing Income statement and Balance sheet. Thus, the source of information is internal. But the management accounting draws information both from internal as well as external sources.
4. **Adherence to Accounting Principles:** Financial accounting system is based on accounting principles and conventional. The financial accounting system can be result-oriented only when the accounting principles and conventions have been properly followed and applied. But management accounting is not bound by the constraints of Generally Accepted Accounting Principles (GAAP) and conventions. The preparation of reports and statement under management accounting are governed by the requirement of the management can frame its own rules and principles regarding for.
5. **Recipients:** Financial statement such as profit and loss account and balance sheet, are extensively used by outsiders, *i.e.* shareholders, creditors, tax

Notes

authorities, etc. On the other hand, management accounting reports are exclusively meant for management. Such reports are not easily available for outsiders and context of information required for internal use.

6. **Coverage:** Financial accounting takes into account each and every transaction which involve money's worth with a view to know the ultimate result of the business activities.
7. **Legal Requirement:** Financial accounting is legally required in case of a company form of organisation. The Indian Companies Act prescribes the guidelines according to which the accounts have to be maintained by companies. The management is required to keep proper records of its business activities and publish the same in the form of Profit and Loss Account and Balance Sheet for the information of shareholders and other. On the other hand, the setting up of management accounting system is purely voluntary.
8. **Precision:** Financial accounting pays more emphasis on precision and considers only actual figures in the preparation of its statements. There is no scope for approximate figures in financial accounting. But the reports and statement as prepared under management accounting system contain more approximate figures than the actual figure. Thus, management accounting is less precise as compared to financial accounting.
9. **Treatment of Data:** Financial accounting presents and publishes accounting information in a systematised manner in accordance the law. Management accounting collects and presents the accounting information in a form which is more suitable to management. It is also concerned with the analysis and interpretation of data as no scientific decision is possible without it.

7.8. Summary

- Cost Management may be defined as collection, measurement, classification and reporting the information to the managers in costing for planning, controlling, and decision-making. It produces information regarding the costing for internal users and it is associated with management accounting.
- Business entities face two major challenges nowadays, one is achieving profitability in the short run and other is maintaining a competitive position in the long run. A Cost Management System (CMS) consists of a set of formal methods, developed for planning and controlling an organization's cost generating activities relative to its short-term objectives and long-term strategies.
- The main objectives of cost accounting are mentioned below:
- To aid in the development of long range plans by providing cost data that acts as a basis for projecting data for planning.
- To ensure efficient cost control by communicating essential data about costs at regular intervals.
- To determine cost of products or activities.
- To identify profitable areas of business.

- To provide information to managements in connection with various operational problems.
- Management accounting is a segment of accounting that deals specifically with the accounting and reporting of information to management, regarding the detailed operation of the company in order for decisions to be taken in various areas of business.
- Management accounting has emerged as an important subject of great practical value in the modern complex business world.
- Management accounting is very useful to a large-scale business enterprise which is confronted with so many business complexities of far-reaching consequences.

Notes

7.9. Review Questions

1. What do you mean by cost management and what are its advantages?
2. Define cost accounting.
3. Differentiate between Cost and management accounting.
4. Discuss advantages of Cost accounting.
5. Mention the scope of management accounting and its limitations.

Cost Concepts

Notes

Structure

- 8.1. Introduction
- 8.2. Classifications of Cost
- 8.3. Meaning of Overheads
- 8.4. Departmentalisation of Overheads
- 8.5. Principles of Overheads Apportionment
- 8.6. Summary
- 8.7. Review Questions

8.1. Introduction

Cost is the amount of expenditure incurred on a specific thing or activity. The Institute of Management Accountants, USA, explains "*cost is a measurement in monetary terms of the amount of resources used for some purpose.*" Cost of an article has two components: quantity and price. When benefits are actually received, the cost becomes an expense. An expense is defined as a cost that has given a benefit and has now expired. Unexpired costs are classified as assets, e.g. prepaid rent, prepaid insurance, etc. The term loss refers to the excess of expenses over revenues for a period. It may also be the excess of the cost of an asset over its related sale proceeds. This occurs when the asset is sold, discarded or destroyed.

8.2. Classifications of Cost

Total cost have been analysed and classified according to their common characteristics in many ways. Such a classification assists in planning and control. Costs have been broken down separated, and classified from a number of bases. These bases are behavioural, functional traceability, responsibility, relevance to decision-making, etc.

Behavioural Classification

This classification is based on whether costs increase or decrease according to change in level of activity. According to behaviour, the main categories of costs are fixed, variable, and semi-variable.

1. **Fixed Costs:** These are the costs in which total cost remains constant over a relevant range of output. However, the cost per unit varies with output. They do not respond to changes in volume up to a certain level. These are usually time-based and largely unavoidable costs. Some typical examples are rent, insurance, taxes and supervisors' salaries. Fixed costs are again

divided into two categories, first the committed fixed costs, which are related to acquiring and maintaining the organisation and its long-term assets. Typical committed fixed costs include straight line depreciation, rent of buildings or equipment, property taxes, insurance and salaries of key personnel. Second, the discretionary fixed costs are the costs which may be reduced partially or dropped wholly according to the policy of the management and needs of the situation. Examples include research and development, advertising, public relations, employee training programmes, and management consultancy services.

2. **Step Costs:** Fixed costs, in general, remain fixed over a range of activity and, then, jump to a new levels as activity changes. Inspection costs and supervisor's salary are examples of step costs.
3. **Variable Costs:** These are costs which change in direct proportion to changes in the volume of activity. When the activity level is zero, the total variable cost is equal to zero. As the activity level increases, the cost increases at a constant rate.
4. **Semi-variable Costs:** It is also known as 'mixed costs', these are neither entirely fixed nor entirely variable. They fall in between, and are partly fixed and partly variable. The fixed part of semi-variable costs represents a minimum fee for making a particular item or service available.

Functional Classification

This classification is based on the purpose for which costs are incurred. The costs of a typical organisation may be divided into manufacturing and non-manufacturing categories. Non-manufacturing costs include administrative and marketing costs, etc.

1. **Manufacturing Costs:** These include all the costs incurred in the factory up to that stage when the goods are ready for dispatch. Traditionally, manufacturing costs are classified into three elements—direct material, direct labour, and factory overheads (direct exps).
2. **Administrative Costs:** These are the costs of formulating the policy, directing the organisations, and controlling the operations. A major portion of these costs are of fixed nature and, uncontrollable. Examples include salaries paid to management and clerical staff, rent, rates and insurance of general office and their lighting, heating and air-conditioning, depreciation of office building, furniture, machinery, etc.
3. **Marketing Costs:** Marketing costs may be further classified as selling and distribution cost. (a) *Selling Costs*—These are costs of seeking to create and simulate demand and of securing orders. Salaries of salesman and technical representatives, advertising, catalogues, price lists, bad debts and collection charges, cost of market research, etc. are examples of selling costs. (b) *Distribution Costs*—Those are which costs incurred in moving the goods from the factory to the consumers. These include warehouse expenses, carriage outwards, depreciation and upkeep of delivery vans, wages of packers, van drivers, etc.

Notes

4. **Financing Costs:** These costs incurred for raising and using capital e.g., interest on loans and debentures, commission or breakage on issue of shares and debentures, discount on the issue of shares and debentures, etc.

Responsibility Classification

Costs are also classified in terms of responsibility over them. As such, there are two groups—controllable and uncontrollable.

1. **Controllable Costs:** There are specific costs over which the manager has the authority. He is responsible too for them. For his or her sphere of influence, the manager can determine how much will be incurred under a certain cost heading.
2. **Uncontrollable Costs:** Costs which cannot be influenced by the action of a manager or supervisor of an undertaking are known as uncontrollable costs.

The distinction between controllable and uncontrollable costs depends upon a point of reference. All costs are controllable to some extent by someone in the organisation. Such a distinction helps in evaluating a manager's performance. An executive should be held responsible only for those costs which are under his control.

Traceability Classification

Costs are classified as direct and indirect costs on the basis of their traceability to a particular job, product or process.

1. **Direct Costs:** These are the expenditures which can be conveniently allocated to a particular job, product or an activity. Material used and labour employed in manufacturing an article are common examples of direct costs.
2. **Indirect Costs:** These are the expenditures which cannot be identified with a product, an activity or a department. Factory manager's salary, factory rent, depreciation of machinery, etc. are typical examples of indirect costs.

The distinction between a direct cost and indirect cost depends upon the unit of product, activity or organisation under consideration. In the same time a cost could be a direct cost to one unit and an indirect cost to another unit. For example, a supervisor's salary may be a direct cost to the production department but an indirect cost to the product being produced in the department. Direct costs are allocated whereas indirect costs are apportioned to different jobs, products or services on a reasonable basis.

Relevant Classification

For managerial decision-making, costs are sub-divided into relevant costs and irrelevant costs.

1. **Relevant Costs:** These are pertinent costs. There are difference between each alternative course of action. These are defined as "*future incremental costs to be affected by the current decisions.*" Thus, the two features are that they are: (i) expected future costs, and (ii) different in different choice decisions. These are being discussed as follows:

2. **Differential Costs:** The difference in total cost between two decision alternatives is differential cost. If a decision results in an increased cost, the differential cost may be called incremental cost. A decision in favour of an alternative is taken only when the incremental revenue between two levels of output is greater than differential cost of those level of activity. However, a decision may involve changes in fixed cost also.
3. **Opportunity Costs:** An opportunity cost is an existing or potential benefit surrendered in favour of an alternative. Opportunity costs are not entered in the accounting records, yet they are used in decision-making. If a particular asset is replaced, the most advantageous action is to sell the old machine. The opportunity cost is the old machine's market value. Similarly, if a manufacturing operation is being discontinued, it would be advantageous to rent all the building than to sell it. The opportunity cost is the rental value.
4. **Out-of-Pocket Costs:** An out-of-pocket cost is the present or future cash expenditure which will change according to the nature of the decision made. For example, it may be proposed to replace company's delivery trucks by an arrangement to deliver goods through public carriers. The depreciated value of the trucks will be irrelevant (being a sunk cost) to decide upon the proposal. But the cost of fuel, driver's salary and maintenance expenditure in using the trucks would be relevant in deciding whether the delivery system should be changed. These are out-of-pocket costs.
5. **Irrelevant Costs:** Costs that will not change are irrelevant to the decision and, therefore, ignored. An example of irrelevant cost is that of sunk cost in a decision to keep a machine or to replace it.

Other Cost Concepts

1. **Shut-down Cost:** These are the costs, which will still be incurred although a plant is shut-down temporarily, e.g. rent rates, depreciation, maintenance of plant, etc.
2. **Research Cost:** It is cost of searching for new or improved products, new applications of material or new or improved methods of production.
3. **Development Cost:** This is the cost of commercial exploitation of successful research. Development cost of new products is treated as an item of deferred expenditure to be spread over a number of years. It is charged product costs when production is fully established.
4. **Joint Cost:** Whenever two or more products are produced out of the same basic raw material or process, the cost of material purchased and processing are called joint costs. Such costs have to be apportioned to various products on some reasonable basis.
5. **Conversion Cost:** The cost of converting raw material into finished products is known as conversion cost. This includes the cost of labour and other manufacturing expenses.

Notes

8.3. Meaning of Overheads

Overheads are "The aggregate of indirect material cost, indirect, wages and indirect expenses." In simple words, overhead costs are those cost which incurred for the benefit of a number of cost centres or cost units and therefore cannot be identified with a particular cost centre or cost unit.

Difference between Overhead, Indirect Expenses and on Cost

Generally overhead, indirect expenses and on cost are used as synonymous of each other. But the question is that whether there is any difference among these terms or not. Theoretically, overhead is much wider than indirect expenses since apart from indirect expenses, indirect material and indirect labour also included in overheads. Secondly, overheads are the estimated costs of indirect material, indirect labour and indirect expenses while indirect expenses are the actual expenses output. On cost is the part of overhead which is charged on any product or sub-work. Practically, there is no difference among these terms but on the basis of trend; use of 'overhead' is preferable.

8.4. Departmentalisation of Overheads

For the smooth and efficient working, a factory is sub-divided into a number of sub-divisions, popularly known as departments. There are two main objectives of departmentalisation, i.e. better control and correct costing of jobs and products. The departments can be of two types—production departments and service or auxiliary departments. The overheads are distributed among various departments according to some logical and reasonable basis in order to compute the cost of different jobs accurately. In brief, process of departmentalisation of overheads can be divided in the following stages:

1. Allocation of Overheads
2. Apportionment of Overheads

Allocation of Overheads

Allocation of cost means charging the full amount of a cost to a cost centre, i.e. to the job, process or to the product, etc. The nature of expenses is such that it can easily be identified and allocated to the cost centre or to the cost unit of production. For example, salary paid to the foreman of a particular production department can be identified and allotted with that department and, therefore, it will be directly charged to the department. Similarly, salary of the sales manager is allocated to the sales department. Other examples are cost of small tools, idle time cost, overtime cost, depreciation of machinery, etc.

Difference between Allocation and Classification of Overheads

The object of classification of overheads is to make separate group on the basis of functions of organisation, nature of expenses or their behaviour. On the contrary, the object of allocation is to allot the whole items of cost centres or cost units. In this way, cost classification is primarily concerned with identifying and grouping of expenses

into distinct class or group, whereas, cost allocation deals with the allotment of whole items of cost to cost centres or cost units.

Apportionment of Overheads

The items of overhead, which cannot be identified with specific departments, are prorated or distributed among the related department and this proportion of distribution is technically referred to as apportionment. Where the expense is a common one and it is to be allotted to different cost centres proportionately on an appropriate basis, it is known as 'apportionment'.

The apportionment of overheads is usually done on the following basis:

- (i) Floor area occupied
- (ii) Labour hours
- (iii) Machine hours
- (iv) Capital value
- (v) Technical estimates
- (vi) Kilowatt hours

Difference between Allocation and Apportionment of Overheads

Generally, the allocation and apportionment of overheads are treated as synonymous words, but there are some differences, which are as follows:

1. When overhead is related with some specific department or cost centre then the overheads is allocated. On the other hand, if the overhead is related with several departments and cost centres then the overhead will be apportioned.
2. Allocation is a direct process but apportionment may be made only indirectly and for which suitable bases are to be selected.
3. Allocation deals with whole items, while apportionment deals with proportions of items of cost.

8.5. Principles of Overheads Apportionment

Apportionment of overheads among production and service department is a vital problem in departmentalisation of overheads. Production departments manufacture products while service departments help them in the process. Hence, the expenses of service departments can be distributed over the products only through production departments.

The following are the main basis of apportionment of overheads:

1. **Floor Area of Departmental Building:** The overheads are apportioned on the basis of floor area occupied by each department or cost centre. This is a better method than the one below where the value of the buildings are not uniform, to cover expenses like lighting, heating, rent, etc.
2. **Departmental Values of Building and Plants:** Overheads related to buildings and plants are apportioned in the ratio of their value *e.g.*, rent, depreciation, insurance, interest on capital (if included in cost).

Notes

Notes

3. **Number of Worker Employed:** Expenses of workers' canteen, welfare, personnel department, time-keeping, etc. can be apportioned on this basis.
4. **Departmental Wages:** Expenses which directly vary with the departmental wages paid can be apportioned on the basis e.g., amount of compensation payable to workers, employer's insurance, etc.
5. **Production Hour Basis:** Majority of general overhead items are apportioned on the basis of departmental labour hours or machine hours. Total 'labour hours' can be applied where labour is predominant and 'machine hours' will be appropriate where machinery is predominant. For instance, factory management and supervision expenses, research and development cost, internal transport and consumable stores can be apportioned on this basis.
6. **Technical Estimate:** The advice of technical personnel may also be useful on the apportionment of certain expenses, e.g., the cost of steam consumed by a particular department can be arrived at on the basis of the engineer's estimates.

Illustration 1: What basis would you follow for distribution of the following overhead expenses to departments?

(a) Store Service Expenses, (b) Employees' State Insurance, (c) Factory Rent, (d) Municipal Rent, Rates and Taxes, (e) Insurance on Building and Machinery, (f) Welfare Department Expenses, (g) Creche Expenses, (h) Steam, (i) Electric Light, (j) Fire Insurance.

Solution:

Expenses	Basis of Apportionment
(a) Store service expenses	Value of materials consumed
(b) E.S.I.	Wages of each department
(c) Factory rent	Floor area
(d) Municipal rent, rates and taxes	Floor area
(e) Insurance on building and machinery	Insurable value
(f) Welfare department expenses	Number of employees
(g) Creche expenses	Number of female employees
(h) Steam	(Potential demand)
(i) Electric light	Calculated units
(j) Fire insurance	(i) For capital items—value of capital items (ii) For stores—Average value of goods in stock.

The following example will indicate how allocation and apportionment of expenses are done in practice and finally, the total overhead of each department is obtained from the departmental distribution summary.

Illustration 2: The "Modern Company" is divided into four department: P_1 , P_2 , P_3 are producing departments and S_1 is a service department. The actual costs for a period are as follows:

Notes

	(₹)		(₹)
Rent	1,000	Supervision	1,500
Repairs to plant	600	Fire insurance in respect of stock	500
Depreciation of plant	450	Power	900
Employer's liability for insurance	150	Light	

The following information is available in respect of the four departments:

	Dept. P ₁	Dept. P ₂	Dept. P ₃	Dept. S ₁
Area (sq. metres)	1,500	1,100	900	500
Number of Employees	20	15	10	5
Total Wages (₹)	6,000	4,000	3,000	2,000
Value of Plant (₹)	24,000	18,000	12,000	6,000
Value of Stock (₹)	15,000	9,000	6,000	—
H.P. of Plant	24	18	12	6

Apportion the costs to the various departments on the most equitable basis.

Solution:

Overheads Distribution Summary

Item	Basis of Apportionment	Total Amount	Production Departments			Service Department
			P ₁	P ₂	P ₃	S ₁
		(₹)	(₹)	(₹)	(₹)	(₹)
1. Rent	floor area (25 paise per metre)	1,000	375	275	225	125
2. Repairs to Plant	Plant value (1 paise per rupee)	600	240	180	120	60
3. Depreciation	Plant value (0.75 paise per rupee)	450	180	135	90	45
4. Light	Floor area (3 paise per sq. metre)	120	45	33	27	15
5. Power	H.P. of plant (₹ 15 per H.P.)	900	360	270	180	90
6. Supervision	No. of employees ₹ 30 per employee)	1,500	600	450	300	150
7. Fire Insurance	Stock value (1/60 of value of stock)	500	250	150	100	-
8. Employer's Liability for Insurance	No. of employees (₹ 3 per employee)	150	60	45	30	15
	Total	5,220	2,110	1,538	1,072	500

8.6. Summary

- Cost is the amount of expenditure incurred on a specific thing or activity. The Institute of Management Accountants, USA, explains "Cost is a measurement in monetary terms of the amount of resources used for some purpose." Cost of an article has two components: quantity and price.
- Total cost have been analysed and classified according to their common characteristics in many ways. Such a classification assists in planning and control. These bases are behavioural, functional traceability, responsibility, relevance to decision-making, etc.

Notes

- Fixed Costs are the costs in which total cost remains constant over a relevant range of output.
- Fixed costs, in general, remain fixed over a range of activity and, then, jump to a new level as activity changes.
- Variable Costs are the costs which change in direct proportion to changes in the volume of activity.
- Semi-variable Costs are also known as 'mixed costs', these are neither entirely fixed nor entirely variable.
- Overheads are *"The aggregate of indirect material cost, indirect, wages and indirect expenses."*
- Allocation of cost means charging the full amount of a cost to a cost centre, i.e. to the job, process or to the product, etc.
- The items of overhead, which cannot be identified with specific departments, are prorated or distributed among the related department and this proportion of distribution is technically referred to as apportionment.
- Apportionment of overheads among production and service department is a vital problem in departmentalisation of overheads. Production departments manufacture products while service departments help them in the process.

8.7. Review Questions

1. What do you mean by cost and classify it?
2. Differentiate between behavioural and functional classifications of cost.
3. What do you mean by overheads?
4. Discuss the main basis of apportionment of overheads.

Marginal Costing and Cost Volume Profit Analysis

Notes

Structure

- 9.1. Introduction
- 9.2. Meaning of Absorption Costing
- 9.3. Meaning of Marginal Costing
- 9.4. Methods for Segregation of Semi-Variable Cost
- 9.5. Marginal Costing and Decision-making
- 9.6. Cost-Volume-Profit Analysis
- 9.7. Methods of Break-even Analysis
- 9.8. Limitation of Break-even Analysis
- 9.9. Summary
- 9.10. Review Questions

9.1. Introduction

As we know that total cost involved in a production may be divided broadly into two categories namely—Variable cost and Fixed cost. Variable cost varies directly with changes in the volume of production whereas, fixed cost remains the same for all levels of production. Raw material and labour costs vary according to level of production so these cost consider as variable cost. Fixed cost remains unchanged whether we produce at any level. Every production involves some amount of fixed cost which is not influence by the variations in the level of production. Rent of building, insurance premium, local taxes, etc. are some of the examples of fixed cost. A manufacturing firm will have to pay rent of the building, insurance premium and local taxes, irrespective of the level of production. The classification of total cost into variable and fixed components play a significant role in managerial decision-making.

9.2. Meaning of Absorption Costing

The traditional technique to calculate the cost of production is the Absorption Costing Technique, according to this total cost involved in a production is aggregated without any regard to its constituents. Since absorption costing technique does not make any distinction between variable and fixed cost and takes into account total cost, it is also known by the names of Full Cost or Total Cost Technique. This method does not consider nowadays. Modern firms are not only concerned with ascertaining cost per unit for price fixation but they are also conscious of cost control and cost reduction for overcoming the keen competition successfully and enhance overall profitability

Notes

of their concerns. The traditional or absorption costing sometimes fails to guide the management properly in decision-making. Therefore, marginal costing technique is now increasingly been used in the formulation of production and price policies. Under marginal costing, fixed costs are separated from the total cost in the analysis of cost data for decision-making as well as for calculation of total cost.

9.3. Meaning of Marginal Costing

In order to understand the marginal costing technique, it is essential to clearly understand the meaning of marginal cost means the cost of marginal or last unit produced. In this connection, a unit may mean a single commodity, one dozen, a gross or any other packet of goods.

Marginal costing is also called 'Variable Costing'. It may be defined as, "*the technique which charges only the variable costs to the cost units*". In this technique, cost of a unit consist only of out-of-pocket costs, which are direct, variable or avoidable costs. These are exclusively incurred iff specific products are manufactured or sold. Fixed costs are treated as period costs and written of in full against the total contribution or income of the period in which they are incurred.

Distinction between Absorption Costing and Marginal Costing

The critical difference between the two approaches lies in the treatment of fixed manufacturing overheads. The main distinction between these two techniques are given below:

Basis of Differences	Absorption Costing	Marginal Costing
1. Overheads	Fixed overheads are brought into all calculations on the assumption that they must be recovered.	Fixed overheads are considered irrelevant for short-run decisions because they are fixed regarding of the level of output within the 'relevant range'.
2. Production/ Sales differences	Low production and high sales result in a lower profit using absorption costing than in marginal costing. This is production oriented.	High production and low sales results in a lower profit for marginal costing than in absorption costing due to lower closing stock valuation. This is more sales oriented.
3. Stock valuation	Absorption costing includes overheads, except marketing so that the stock value represents all the costs of getting stock to its current condition and location.	Marginal costing excluded fixed overheads for stock valuation and therefore, does not represent the full cost of producing finished goods.
4. Unit costs	All costs, except selling costs are charged to cost units on the principle that all costs relating to the product should be included in the unit cost.	Only variable costs are charged to cost units. It is so on the principle that fixed costs are time based, and should not be charged to output.

Notes

5. Costing system	Over and under-absorption of overheads are difficult to operate and sometimes for managers to understand.	Marginal costing is easier to use and understand by managers.
6. Reporting	Absorption costing is primarily used for external reporting, i.e., reporting to shareholders, government and tax authorities.	Marginal costing is primarily used for internal reporting, i.e. reporting to management for decision-making.

Relation between Marginal Costing and Differential Costing

Marginal costing is sometimes confused with differential costing. However, the two are not exactly the same. A difference in cost between one course of action and another is called differential cost. If a decision results in an increased cost, the differential cost may be called incremental cost. A decision in favour of an alternative is taken only when the incremental revenue between two levels of output is greater than differential cost of those levels of activity. Thus, differential cost is the difference in net costs and benefits between two or more alternative courses of action. If the selection of an alternative involves changes in variable costs only, marginal cost and differential costs are the same. However, a decision may involve changes in fixed costs also. In such a situation, the decision is taken on the basis of only differential costing and not marginal costing.

Illustration 1: From the following data prepare statements of cost according to both absorption costing and marginal costing system:

Particulars	Product X (₹)	Product Y (₹)
Sales	15,000	40,000
Direct material	6,000	18,000
Direct labour	4,000	7,000
Factory overheads:		
Fixed	3,000	3,000
Variable	1,000	2,500
Administrative overheads:		
Fixed	500	1,000
Selling overheads:		
Fixed	1,000	1,500
Variable	500	1,500

Solution:

Statement of Cost and Profit (Absorption Costing)

Particulars	Product X (₹)	Product Y (₹)	Total (₹)
Sales (A)	15,000	40,000	55,000
Less: Cost of Sales:			

Notes

Direct material	6,000	18,000	24,000
Direct labour	4,000	7,000	11,000
Factory overheads	4,000	5,500	9,500
Administrative overheads	500	1,000	1,500
Selling overheads	1,500	3,000	4,500
Total Cost (B)	16,000	34,500	50,500
Net Profit (A + B)	(-) 1,000	5,500	4,500

Illustration 2: A factory is currently running at 50 per cent capacity and produces 5,000 units at a cost of ₹ 90 per units as per details below:

Material	₹ 50
Labour	₹ 15
Factory overheads	₹ 15 (₹ 6 fixed)
Administrative overheads	₹ 10 (₹ 5 fixed)

The current selling price is ₹ 100 per unit. At 60 per cent working material cost per unit increases by 2 per cent and selling price per unit falls 2 per cent.

At 80 per cent working material cost per unit increases by 5 per cent and selling price per unit falls by 5 per cent. Estimated profits of the factor at 60 per cent and 80 per cent working and offer your comments.

Solution:

Marginal Cost Statement

Particulars	Capacity Level					
	50% 5,000 Units		60% 6,000 Units		80% 8,000 Units	
	Per Unit (₹)	Total (₹)	Per Unit (₹)	Total (₹)	Per Unit (₹)	Total (₹)
A. Sales	100	5,00,000	98	5,88,000	95	7,60,000
B. Marginal cost:						
Material	50	2,50,000	51	3,06,000	52.50	4,20,000
Labour	15	75,000	15	90,000	15	1,20,000
Factory overhead	9	45,000	9	54,000	9	72,000
Administrative overheads	5	25,000	5	30,000	5	40,000
Total (B)	79	3,95,000	80	4,80,000	81.5	6,52,000
C. Contribution (A - B)	21	1,05,000	18	1,08,000	13.5	1,08,000
D. Fixed cost:						
Factory overhead	6	30,000	5	30,000	3.75	30,000
Admn. overhead	5	25,000	4.17	25,000	3.13	25,000
Total (D)	11	55,000	9.17	55,000	6.88	55,000
E. Profit (C-D)	10	50,000	8.83	53,000	6.62	53,000

Comments

1. The profits of the factory increased from ₹ 50,000 to ₹ 53,000 as a result of increase in the capacity level from 50 per cent to 60 per cent. However, the profits would have been more if the material cost would not have increased and the selling price would not have decreased.
2. The profit remained unchanged despite increase in the capacity level from 60 per cent to 80 per cent. The gain from increase in the capacity level was neutralized by 5 per cent increase in the material cost and 5 per cent decrease in selling price.

Notes

Statement of Cost (Marginal Costing)

Particulars	Product X (₹)	Product Y (₹)	Total (₹)
Sales (A)	15,000	40,000	55,000
Less: Cost of Sales:			
Direct material	6,000	18,000	24,000
Direct labour	4,000	7,000	11,000
Variable factory overheads	1,000	2,500	3,500
Variable selling overheads	500	1,500	2,000
Total (B)	11,500	29,000	40,500
Contribution (A-B)	3,500	11,000	14,500
Less: Fixed Cost (Factory Administrative and Selling)	4,500	5,500	10,000
Net Profit	(-) 1,000	5,500	4,500

Sometimes fixed costs are not traceable to different products, then the statement of cost will be prepared after contribution margin as under:

Statement of Cost (Marginal Costing)

Particulars	Product X (₹)	Product Y (₹)	Total (₹)
Sales (A)	15,000	40,000	55,000
Less: Cost of Sales:			
Direct material	6,000	18,000	24,000
Direct labour	4,000	7,000	11,000
Variable factory overheads	1,000	2,500	3,500
Variable selling overheads	500	1,500	2,000
Total (B)	11,500	29,000	40,500
Contribution (A-B)	3,500	11,000	14,500

Notes

Less: Fixed Cost			
(Factory Administrative and Selling)			10,000
Net Profit			4,500

Features of Marginal Costing

The main features of marginal costing are as follows:

Cost Classification

The marginal costing technique makes a sharp distinction between variable costs and fixed costs. On the basis of variable cost:

1. **Inventory Valuation:** Under marginal costing, inventory for profit-measurement is valued at marginal cost in sharp contrast to total unit cost under absorption costing method.
2. **Marginal Contribution:** Marginal costing technique makes use of marginal contribution for making various decisions. Marginal contribution is the difference between sales and marginal cost, judging the profitability of different products or departments. It is used for Semi-variable overheads.

9.4. Methods for Segregation of Semi-Variable Cost

The basic condition for application of the technique of marginal costing is the distinction between fixed and variable costs. This means that semi-variable overhead will have to be segregated into fixed and variable elements. The following methods may be used for segregation of semi-variable cost:

Scatter Graph Method

The scatter graph method requires a plot of cost and activity observations on a graph. The accountant's judgement is used to determine usually a line on the graph that best explains the relationship between changes in cost and changes in the level of activity. Once the line has been determined, any two points on the line are then selected to estimate the fixed cost and the variable costs rate.

Equation Method

Under the method the segregation of semi-variable cost is done with the help of straight line equation. The equation used for the purpose is:

$$Y = MX + C$$

where

Y = Total semi-variable cost;

M = Variable cost per unit;

X = Output; and

C = Fixed cost included in semi-variable cost

Illustration 3: Taking the figure for July and August:

$$\text{July} \quad 75,000 = 25,000 M + C \quad \dots (i)$$

$$\text{August} \quad 66,000 = 15,000 M + C \quad \dots (ii)$$

Solution:

To get the value of M, subtracting (i) and (ii) we get,

$$9,000 = 10,000 M$$

$$M = 0.90$$

Putting value of M in (i), we get

$$75,000 = 25,000 \times 0.90 + C$$

$$75,000 = 22,500 + C$$

$$C = ₹ 52,500$$

Notes

High and Low Points Method

It is also known as 'range method', this requires only two observations of activity and cost data. One observation is at the highest activity level and the other is at the lowest activity level within a relevant range. The variable cost per unit is obtained by dividing the difference in the two observed costs by the difference in level of activity.

$$\text{Variable cost per unit} = \frac{\text{Difference in total cost}}{\text{Difference in total activity}}$$

An estimate of fixed cost is obtained by subtracting total variable costs at the highest (or lowest) activity from the total cost at the highest (or lowest) activity.

$$\text{Fixed costs} = \text{Total cost} - \text{Variable cost}$$

Analytical Method

This method considers the degree of variability for each item of semi-variable expenses. Some semi-variables items have a 40 per cent variability while others may have 60 per cent variability. Though it seems to be an easy method, yet it is very difficult to estimate the degree of variability of an expense.

Illustration 4: Taking the amount of any month say October and assuming a 60 per cent degree of variability, the analysis shall be as under:

$$\text{Variable element} = 60 \text{ per cent of } ₹ 85,000 = ₹ 51,000$$

$$\text{Fixed element} = 85,000 - 51,000 = ₹ 34,000$$

Solution: Fixed element will remain constant, whereas variable element will vary according to variation in production. Thus, for January, Fixed element is ₹ 34,000 and

$$\text{Variable portion} = \frac{₹ 51,000}{₹ 30,000} \times ₹ 20,000 = ₹ 34,000$$

Therefore, the total semi-variable expenses for 20,000 units

$$= ₹ 34,000 + ₹ 34,000 = ₹ 68,000$$

Level of Output Method

Under this method, variable element is calculated.

$$\text{Variable element} = \frac{\text{Change in amount of expenses}}{\text{Change in quantity}}$$

This method is simple as it is clear from following example but is not scientific and accurate method.

Illustration 5: The X Co. Ltd. submits the following information in respect of semi-variables costs.

Notes

Month	Production Units	Semi-variable Costs
July	25,000	75,000
August	15,000	66,000
September	40,000	1,00,000
October	30,000	85,000
November	50,000	1,15,000
December	35,000	95,000

During the month of January 2005, the production was 20,000 units only. Calculate the amount of fixed variables and total semi-variable expenses for the month.

Solution: Taking the level of activity of any two months, say September and November, the variable costs may be calculated as follows:

Month	Production Units	Semi-variable (₹)	Fixed (₹)	Variable (₹)
September	40,000	1,00,000	4,00,000	6,00,001
November	50,000	1,15,000	4,00,002	7,50,002
Difference	10,000	15,000		

$$\text{Therefore, variable element} = \frac{\text{Change in amount}}{\text{Change in quantity}} = \frac{\text{₹ 15,000}}{\text{₹ 10,000}} = \text{₹ 1.50 per unit}$$

Calculation of fixed, variables and total semi-variables costs of 20,000 units for the month of January:

$$\begin{aligned} \text{Variable overheads for January} &= 20,000 \times \text{₹ 1.50} = \text{₹ 30,000} \\ \text{Fixed overheads} &= \text{₹ 40,000} \\ \text{Total Semi-variable overheads} &= \text{₹ 70,000} \end{aligned}$$

NOTE:	1. Variable overheads for September	= 40,000 × ₹ 1.50
		= ₹ 60,000
	2. Overheads for November has been computed accordingly.	
	3. Fixed overheads for September	= ₹ 1,00,000 – ₹ 60,000
		= ₹ 40,000

Least Square Method

Under this method, the statistical technique of fitting an equation with the help of a number of observations is used to segregate semi-variable cost. We know the straight line equation $Y = MX + C$ where 'C' represents the fixed element and 'M' the degree of variability. From this basic equation, and given a set of observations, N, two simultaneous linear equations can be used to determine the fixed cost element and the variable cost element per unit of activity. The linear equations are:

Notes

$$\sum Y = Na + b \sum X \quad \dots (i)$$

$$\sum XY = a \sum X + b \sum X^2 \quad \dots (ii)$$

where,

X = number of units

Y = total cost at a given production level

N = number of observations

a = fixed cost

b = variable cost per unit of production.

The application of the least squares method can be further clear from the study of the example given below:

Illustration 6. ESS Co. Ltd. submits the following information for a six months period ended on 31st December, 2004:

Month	Production Units (₹)	Semi-variable Costs (₹)
July, 2004	20,000	20,000
August, 2004	40,000	30,000
September, 2004	60,000	40,000
October, 2004	80,000	50,000
November, 2004	1,00,000	60,000
December, 2004	1,20,000	70,000

Calculate the amount of fixed and variable element in semi-variable cost.

Solution:

Month	Production (Units) (X)	Semi-variable Expenses (₹) (Y)	X ²	XY (₹)
July, 2004	20,000	20,000	4,00,000	4,00,000
August, 2004	40,000	30,000	16,00,00	12,00,000
September, 2004	60,000	40,000	36,00,000	24,00,000
October, 2004	80,000	50,000	64,00,000	40,00,000
November, 2004	1,00,000	60,000	1,00,00,000	60,00,000
December, 2004	1,20,000	70,000	1,44,00,000	84,00,000
Total	$\sum X^*$ = 4,20,000	$\sum Y$ = 2,70,000	$\sum X^2$ = 3,64,00,000	$\sum XY$ = 2,24,00,000

$$N = 6$$

$$\sum X = 4,20,000$$

$$\sum Y = 2,70,000$$

$$\sum X^2 = 3,64,000$$

$$\sum XY = 2,24,000$$

substitute these values in the two linear equations, we have

$$\sum Y = Na + B \sum Y$$

$$₹ 2,70,000 = 6a + 4,20,000b \quad \dots (i)$$

$$\sum XY = a \sum X + b \sum X^2$$

$$₹ 2,24,00,000 = 4,20,000a + 3,64,000b \quad \dots (ii)$$

Notes

In order to solve the equations, it will be necessary to eliminate one of the terms. The "a" term can be eliminated by multiplying equation (i) by 70, and then subtracting it from equation (ii), we get

$$₹ 2,24,00,000 = 420a + 3,64,00,000b$$

$$₹ 1,89,00,000 = 420a + 2,94,00,000b$$

$$₹ 35,00,000 = 70,00,000b$$

$$b = \frac{35,00,000}{70,00,000}$$

$$b = ₹ 0.50$$

Solve 'a' by substituting ₹ 0.50 for 'b' in either equations

$$₹ 2,70,000 = 6a + 4,20,000 \times 0.50$$

$$₹ 2,70,000 = 6a + 2,10,000$$

$$6a = 2,70,000 - 2,10,000$$

$$6a = 60,000$$

$$a = ₹ 10,000 \text{ fixed cost}$$

The computation for 'a' and 'b' establish the values for the fixed and variable components in the semi-variable costs. Using the calculated values, $a = ₹ 10,000$ fixed cost per month and $b = ₹ 0.50$ variable cost per unit, the composition of the semi-variable cost could be shown as follows:

$$4,20,000 \text{ units @ } 0.50 \text{ per unit} = ₹ 2,10,000 \text{ (Variable cost)}$$

$$6 \text{ months @ } ₹ 10,000 \text{ per month} = ₹ 60,000 \text{ (Fixed cost)}$$

$$\text{Total Semi-variable cost} = ₹ 2,70,000$$

9.5. Marginal Costing and Decision-making

The effort of the management in an enterprise is to optimise profits or minimize losses. In their efforts to do so they have to review the existing production, pricing and marketing policies from time to time and make necessary adjustments, if needed. Marginal costing technique provides objective basis and facilitates the task of decision-making in respect of the following:

1. Ascertaining Relative Profitability of Products

A manufacturing concern engaged in the production of various products is interested in the relative profitability of its products so that it may suitably change its production and sales policies especially in case of those products which it considers less profitable or unproductive. The concept of P/V Ratio provided by the marginal costing technique is much helpful in understanding the relative profitability of products. The Absorption costing method would hastily conclude that it is of no use of produce and run the department and it should be close down if a product or department shows loss. Sometimes this type of conclusion will mislead

the management. The marginal costing technique would suggest that it would be profitable to continue the production of a product if it is able to recover the full marginal cost and a part of the fixed cost.

2. Determining Profitability of Alternative Product-mix

Since the objective of an enterprise to maximise profits, the management would prefer that product-mix which is ideal one in the sense that it yields maximum profits. Product-mix means combination of units or values of products and select the one which maximises profits.

3. Make or Buy Decision

If similar product or component is available outside, than a manufacturing firm compares its unit cost of manufacture with the price at which it can be purchased from the market. The marginal cost analysis suggests that it is profitable to the total manufacturing cost. In other words, the firm should prefer to buy if the marginal cost is more than the price to make when the marginal cost is lesser than the purchase price. However, the available plant capacity will exert its own influence in such a decision-making.

4. Expand or Buy Decision

If the capacity of existing plant is not using fully than firm should not interested to buy product for market but if more production firm need new or additional plant, in that case marginal costing helps in decision-making. The firm should evaluate the capital expenditure proposal resulting out of expansion programme in items of cash flows and cost of capital. If the installed capacity of the existing plant is partially being used, then it can be utilised by producing more internally. The additional production may necessitate purchase of some specialised equipment and thus involve interest and depreciation cost. It is advisable to expand and produce if the enterprise is able to save some costs by doing so.

5. Pricing in Home and Foreign Markets

Pricing of a product is governed primarily by its cost of production and the nature of competition being faced by the production unit. Once a price is fixed by market forces, it remains stable at least in the short period. During short period, because of selling period, marginal cost and fixed costs remain the same, a businessman is in a position to establish relationship between all of them. On the basis of such a relationship, it is very easy to fix the volume of sales and selling price during normal and abnormal times in the home market. It is also a problem that how far the prices can be cut in case of foreign buyer to effect additional sales. Marginal costing technique gives a realistic answer to this problem.

6. Pricing in Foreign Markets

A foreign market can be kept separate from the domestic market due to many legal and other restrictions. These restrictions are imposed on imports and exports and as such a different price can be charged from foreign buyers. Any company can enjoy surplus production capacity by increasing its production to sell in the foreign market at lower price if

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its full fixed cost already stands recovered for the production from home market.

7. Profits Planning

The process of profit planning involves the calculation of expected costs and revenues, arising out of operations at different levels of plant capacity for the production. The cost and revenues at different level of operations may be different and a concern has to choose one level at which its profits are maximum. Marginal costing technique helps the management by suggesting a suitable product-mix. It also guides the management in selecting the best product-mix for attaining a specified level of profit.

Advantages of Marginal Costing

Marginal costing helps in short-term decisions. It provides a base to the management for there tasks of unit cost measurement, stock valuation and income measurement.

Advantages of marginal costing are as follows:

1. **Assists Planning and Control:** The separation of factory overhead into its fixed and variable expenses is a fundamental requirement of marginal costing. It assists planning, decision-making and control. It also guides the management in making periodic profit plans. Since it examines the effect of fluctuating volumes on costs, it assists the change in profitability which may occur under certain condition.
2. **Enable Break-even Analysis:** Break-even point is the point at which the sales revenue is just equal to both the fixed and variable overhead costs. In terms of units, it is determined by dividing fixed costs into the contribution margin. The contribution margin is the difference between the unit selling price and the marginal costs. For break-even in terms of sales revenue, the fixed cost are divided by P/V ratio. These concepts are based on marginal costing.
3. **Competitive Pricing:** In the short-run, prices can be determined through the application of marginal costing more intelligibility. Sometimes, the price of a certain product cannot be usual total cost plus something. But, in any case, it has top be above the marginal cost so that every unit-sold plays some part in the recovery of fixed cost.
4. **Avoids Distortion of Profits:** Where sales do not match with production, the inclusion of fixed overheads in stock valuation tends to distort recorded profit from one period to another. When a proportion of fixed overheads is carried forward in stock valuation, the real effect of selling tends to be concealed. Marginal costing avoids the distortion in as much as only variable overheads are included in the unit cost.
5. **Simplified Measure of Relative Profitability:** The arbitrary apportionment of fixed cost complicates any attempt to measure profitability of different products. Marginal costing greatly simplifies the profitability analysis. It shows the product-wise contribution margin.

Disadvantages of Marginal Costing

The disadvantages of marginal costing relate mainly to misuse rather than to any theoretical drawbacks. These are as follows:-

1. **Short-term Considerations:** The relationship between costs and volume is true only in the short run. Any attempt to base a long-term decision on marginal cost will be detrimental to the interest of the firm.
2. **Arbitrary Exercise:** The separation of semi-variable costs into their fixed and variable elements is an arbitrary exercise. This may be subject to inaccuracy and fluctuation at different levels of output. As such, the basic cost information used in decision-making may contain a substantial degree of error.
3. **Dangers in Pricing:** Prices in the long-run reflect a recovery of the utilisation of resources represented by fixed costs. They are also expected to give a return on the capital employed. Once prices are announced below the total cost, it may be difficult to raise them later. As production cannot be achieved without fixed costs, it is improper, in general, to ignore them.
4. **Lack of General Acceptability:** There has been absence of support and acceptability of marginal costing. None of the regulatory authorities, be it government, tax authorities, or the accounting profession, have accepted this technique. For valuing inventories, external reporting, and income-tax reporting, it is full costing which is insisted upon.

Notes

9.6. Cost-Volume-Profit Analysis

Cost-Volume-Profit (CVP) analysis is an extension of the technique of marginal costing. As the name suggests, it established the relationship between costs, volume and profits. The behaviour of the three key parameters also gives rise to Break-Even Point (BEP). This is the critical point of no profit and no loss. It is defined as the level of output which evenly breaks-even the costs and revenues. At this specific level of activity, the sales revenue covers the total cost. Consequently, the profits are zero. The BEP may be calculated either in terms of:

- (i) Units of Output, or
- (ii) Sales Revenue.

9.7. Methods of Break-even Analysis

There are two methods of Break-even analysis, viz. (1) Graphic Method and (2) Algebraic Method.

1. Graphic Method

According to this method, the data of costs and revenues at different levels of output or sales are plotted on a graph paper. This gives Break-Even chart showing a definite level of output/sales at which total costs and total revenues are equal. The graphic representation gives a bird's eye-view of the cost-volume-profit relations.

Notes

Construction of Break-even Chart

The construction of Break-even chart is not difficult. Information needed to draw a Break-even chart are as follows:

- (i) *Variable Cost*: This is the cost which varies directly with production/sales. Total variable cost for any volume of output can be found out by multiplying the output variable cost per unit.
- (ii) *Cost*: This is that portion of total costs which is not affected by the variations in the level of activity. It means fixed costs remain the same at all levels of production. The portion of fixed cost has to be separated from total cost carefully for accurate analysis of the problems.
- (iii) *Selling Price*: Per unit selling price is determined by market forces of demand and supply and the total selling price at different scales can be calculated at multiplying the scale of production and selling price per unit.

After having ascertained the variables of fixed costs, and total cost for various levels of output, the Break-even chart can be drawn through the following steps:

1. Fix the scale of production and cost/revenue which shall be shown on X-axis and Y-axis respectively.
2. Locate the point of fixed cost on Y-axis and draw a line through this point parallel to X-axis. This is the Fixed Cost Curve (FCC).
3. Draw total revenue curve by locating and joining the points of revenues for different levels of production. The revenue curve starts from point of origin because the revenue at zero output is zero.
4. Draw Total Cost Curve (TCC) by locating and joining the points of total costs for different levels of production. Total cost curve starts from the point of fixed cost because total cost at zero output is equal to fixed cost.

From the chart it will be seen that the total costs curve (TCC) and total revenue curve (TRC) intersect each other at some point. The Break-even point corresponding to which break-even output at OX-axis can be determined.

Method of Preparing B.E.P. Chart

For preparing Break-even chart, the data relating to firm's capacity of production (in unit or sales value), variable costs and fixed costs are required. The steps to prepare a break-even chart are as follows:

- (i) First of all, we have to prepare a table showing fixed costs, variable costs, total costs and total sales value at different levels of production, *i.e.* production at zero level and existing production level.
- (ii) The X-axis (horizontal line) on graph represents volume of sales and output and Y-axis (vertical line) presents costs and sales value.
- (iii) The fixed cost line is drawn parallel to X-axis. This line indicates that fixed expenses remain the same with any volume of production. The variable costs for two levels of activity are plotted over the fixed cost line. The variable cost line is joined to fixed cost line at zero volume of production. This line can also be regarded as the total cost line because it starts from the point where fixed cost has been incurred and variable cost is zero.

Notes

- (iv) Sales values at two levels of output are plotted, joined and the obtained line is known as the sales line.
- (v) The sales line will cut the total cost line at a point where the total costs are equal to total revenues and this point of intersection of two lines is known as break-even point—the point of no profit no loss.
- (vi) The number of units to be produced at the break-even point is determined by drawing a perpendicular to the X-axis from the point of intersection and measuring the horizontal distance from the zero point to the point at which the perpendicular is drawn.
- (vii) The sale values at break-even point is determined by drawing a perpendicular to the Y-axis from the point of intersection and measuring the vertical distance from the zero point to the point at which the perpendicular is drawn. The area below B.E.P. represents the loss area as the sales revenue is less than the total cost and area above the B.E.P. indicates the area of profit as the sales revenues exceeds the total cost.
- (viii) The Angle of incidence is the angle formed in the break-even chart at the break-even point at which the sales line cuts the total cost line. This angle indicates the profits are being made at a high rate. On the other hand, a small angle indicates a low rate of profit and suggests that variable costs form a major part of cost of production. A large angle of incidence with high margin of safety indicates the most favourable position of a business and even the existence of monopolistic conditions. The margin of safety is represented on the chart as the distance between the break-even point and the output produced and sold.

The break-even chart may be understood from the following illustrations:

Illustration 5: Draw a break-even chart from the following information:

Output (Units)	4,000	8,000	12,000	16,000	20,000
Fixed Costs (₹)	20,000	20,000	20,000	20,000	20,000
Variable Cost ₹ 3 per Unit (₹)	12,000	24,000	36,000	48,000	60,000
Sales ₹ 5 per Unit (₹)	20,000	40,000	60,000	80,000	1,00,000

Also check the B.E.P. and Margin of Safety by arithmetic formula.

Solution: On the basis of given informations, the break-even chart will be as given:

Verification by Mathematical Formula:

$$\text{B.E.P. in Units} = \frac{F}{\text{Contribution (C)} = S - V = 5 - 3 = 2} = \frac{\text{₹ } 20,000}{2} = 10,000 \text{ Units}$$

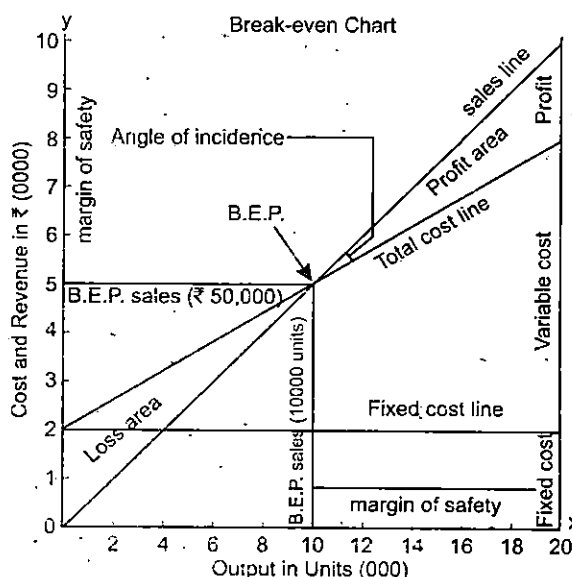
$$\text{B.E.P. in Rupees} = 10,000 \text{ Units} \times \text{₹ } 5 \text{ per Unit} = \text{₹ } 50,000$$

$$\text{Margin of Safety} = \text{Actual Sales} - \text{B.E.P.}$$

$$\text{in Units} = 20,000 \text{ Units} - 10,000 \text{ Units} = 10,000 \text{ Units}$$

$$\text{in ₹} = \text{₹ } 1,00,000 - \text{₹ } 50,000 = \text{₹ } 50,000$$

Notes



2. Algebraic Method

In order to understand the Cost-Volume-Profit relationship precisely and verify the results drawn from Break-even chart the algebraic method may be used. The algebraic equation showing relationship between cost, volume and profit is:

$$S - V = F + P$$

At Break-even point, there is no profit and the contribution is just equal to fixed cost. Thus,

$$S - V = F \text{ (at break-even point).}$$

The following algebraic methods are used for the study of cost-volume-profit relationship:

1. Contribution
2. Profit-Volume Ratio (P/V Ratio)
3. Break-even Point
4. Margin of Safety

(a) Contribution

The difference between sales and marginal cost (variable cost) is known as contribution. In other words, it is just like a fund which is first utilised to recover fixed cost and balance is known as profit. Thus, the total of fixed cost and profit is called contribution. It is also known as 'Gross Margin' or 'Gross Profit'. The contribution may be expressed in terms of formula as follows:

$$(i) \quad \text{Contribution} = \text{Sales} - \text{Variable Cost}$$

$$\text{or} \quad C = S - V$$

Variable cost includes direct materials, direct labour, direct expenses and all variable overheads. Variable cost means 'marginal costs'.

$$(ii) \quad \text{Contribution} = \text{Fixed Cost} + \text{Profit}$$

$$\text{or} \quad C = F + P$$

Both of the above formulae may be represented in the form of following 'Marginal Cost Equation':

$$\text{Sales} - \text{Variable Cost} = \text{Fixed Cost} + \text{Profit}$$

$$\text{or } S - V = F + P$$

It is clear from the above formula of contribution that if contribution is greater than fixed cost ($C > F$), there will be profit to the business while if contribution is less than fixed cost ($C < F$), it will have loss and if contribution is equal to fixed cost ($C = F$), it will have neither profit nor loss.

Contribution Per Unit: If per unit variable cost is deducted from selling price per unit, it will be contribution per unit. It may be written in the form of the following formula:

Where

$$CP = SP - VP$$

CP = Contribution per unit
SP = Selling price per unit
VP = Variable cost per unit

Profit and fixed cost may be determined easily with the help of contribution. The following formulae are worth remembering:

$$(i) \quad P/V \text{ Ratio} = \frac{C}{S} \times 100 \quad \text{or} \quad \frac{CP}{SP} \times 100$$

$$\text{or} \quad \frac{S - V}{S} \times 100 \quad \text{or} \quad \frac{SP - VP}{SP} \times 100$$

where, C = Total contribution: S = Total sales in ₹
CP = Contribution per unit: SP = Selling Price per unit
V = Total variable cost: VP = Variable cost per unit

$$(ii) \quad P/V \text{ Ratio} = \frac{\text{Fixed Cost} + \text{Profit}}{\text{Sales}} \times 100$$

$$\text{or} \quad \frac{F + P}{S} \times 100$$

If sales and profit of two different periods are given then:

$$P/V \text{ Ratio} = \frac{\text{Change in Profit}}{\text{Change in Sales}} \times 100$$

Sometimes sales and total costs are given of two periods. In this case for finding out profit of each period, total cost is deducted from the amount of sales.

If the amounts of profit and margin of safety are given then:

$$P/V \text{ Ratio} = \frac{\text{Profit}}{\text{Margin of Safety}} \times 100$$

$$\text{or} \quad \frac{P}{MS} \times 100$$

(b) Profit-Volume Ratio (P/V Ratio)

On the basis of Profit-Volume ratio, we can find profit, contribution, fixed and variable costs easily. The following formulae may be used in this respect:

$$(i) \quad \text{Contribution} = \text{Sales} \times P/V \text{ Ratio}$$

$$\text{or} \quad C = S \times P/V \text{ Ratio}$$

Notes

Notes

- (ii) Variable Cost = Sales \times (100 – % of P/V ratio)
 (iii) Fixed Cost = (Sales in ₹ \times P/V Ratio) – Profit
 (iv) Profit = (Sales \times P/V Ratio) – Fixed Cost
 (v) P/V Ratio = 100 – % of Variable Cost to Sales
 (vi) % of Variable Cost to Sales = 100 – % of P/V Ratio

Determining Additional Sales Volume for Recovering Proposed or Additional Expenses

If management of a business firm wants to increase sales volume, it is obvious to have an increase in selling expenses. The management will give its acceptance for this increase only after it is sure about increase in volume of sales. An additional amount of sales may be computed with the help of P/V ratio from the following formula:

$$\text{Additional Sales (in ₹)} = \frac{\text{Proposed or Increased Expenditure}}{\text{P/V Ratio}}$$

(c) Break-even Point

Break-even point may be calculated in the following two ways:

1. Break-even Point (in Units)
2. Break-even Point (in ₹)

1. Break-even Point (in Units): As we have already cleared that there is neither profit nor loss at B.E.P., therefore, at this point:

$$\text{Sales} = \text{Fixed Cost} + \text{Variable Cost}$$

or

$$\text{Selling Price per Unit} \times \text{Volumes of Sales}$$

$$= \text{Total Fixed Cost} + (\text{Variable Cost per Unit} \times \text{Volume})$$

$$\text{or} \quad \text{SP} \times \text{Q} = \text{F} + (\text{VP} \times \text{Q})$$

$$\text{or} \quad (\text{SP} \times \text{Q}) - (\text{VP} \times \text{Q}) = \text{F}$$

$$\text{or} \quad \text{Q} (\text{SP} - \text{VP}) = \text{F}$$

$$\therefore \quad \text{Q} = \frac{\text{F}}{(\text{SP} - \text{VP})}$$

$$\therefore \text{ B.E.P. (in Units)} = \frac{\text{Fixed Cost}}{\text{Selling Price per Unit} - \text{Variable Cost per Unit}}$$

$$\text{or} \quad \frac{\text{F}}{\text{SP} - \text{VP}} = \frac{\text{F}}{\text{CP (Contribution per unit)}}$$

It is clear that B.E.P. (in units) may only be possible to calculate if selling price per unit and variable cost per unit are given or these two may be calculated with the help of given informations, otherwise, B.E.P. in units cannot be calculated.

2. Break-even Point (in ₹): If break-even point (in units) is multiplied with selling price per unit, we can get Break-even point in Rupees. In short,

$$\text{B.E.P. (in ₹)} = \text{BEP in Units} \times \text{Selling Price Per Unit}$$

It is of two types:

- (i) **Cash Break-even Point:** When break-even point is calculated only with those fixed costs which are payable in cash, such a break-even point is known as cash break-even point. This means, that depreciation and other non-cash fixed costs are excluded from the fixed costs while items of liabilities matured for payment, i.e. installment of loan due for payment are included in fixed costs. It means while calculating this B.E.P., only those items of costs and revenues are considered which involve cash flows.

$$\text{Cash B.E.P. (in Units)} = \frac{\text{Cash Fixed Cost} + \text{Loan Installment}}{\text{Cash Contribution Per Unit}}$$

$$\begin{aligned}\text{Cash B.E.P. (₹)} &= \frac{(\text{Cash Fixed Cost} + \text{Loan Installement}) \times \text{SP}}{\text{Contribution Per Unit}} \\ &= \frac{\text{Cash Fixed Cost} + \text{Loan Installment}}{\text{P/V Ratio}}\end{aligned}$$

- (ii) **Cost Break-even Point:** Cost Break-even point indicates a situation where the costs of operating two alternatives are equal. The point enables the firm to identify which is the best to operate at or a given level of output assuming that sale price per unit is the same. Such break-even point can be calculated only when the following conditions are fulfilled:

- (a) Fixed costs of operating two alternatives are not the same.
(b) Variable cost per unit of the alternative having higher fixed costs should be lesser than that of alternative having lower amount of fixed costs.

Cost B.E.P. or Sales Level at which profit of both the alternatives

$$= \frac{\text{Difference in Fixed Cost}}{\text{Difference in Variable Cost per Unit}} = \frac{F - F_1}{V - V_1}$$

where,

F = Fixed cost of more expensive alternative

F₁ = Fixed cost of less expensive alternative

V = Variable cost per unit of alternative having higher fixed costs

V₁ = Variable Cost per unit of alternative having lower fixed costs.

Margin of Safety (MS)

Margin of Safety in Units = Actual Sales Units – B.E.P. Sales in Units

Margin of Safety in ₹ = Actual Sales in ₹ – B.E.P. Sales in ₹

The margin of safety may be determined on the basis of P/V Ratio. Under this situation, the formula will be as follows:

$$\text{Margin of Safety} = \frac{\text{Profit}}{\text{P/V Ratio}} \times 100$$

Margin of safety may be computed as percentage of sales. The formula is as under:

$$\text{M.S. Ratio} = \frac{\text{Margin of Safety}}{\text{Actual Sales}} \times 100$$

Illustration 6: The following information is obtained from 'A' Co. Ltd. in a certain year:

	₹
Sales	1,00,000
Variable Cost	60,000
Fixed Cost	30,000

Notes

Find the (i) P/V Ratio, (ii) Break-even Point, and (iii) Margin of safety

Solution:

Given:

$$\text{Sales (S)} = ₹ 1,00,000$$

$$\text{Variable Cost (V)} = ₹ 60,000$$

$$\text{Fixed Cost (F)} = ₹ 30,000$$

$$(i) \quad \text{P/V Ratio} = \frac{S - V}{S} \times 100 = \frac{₹ 1,00,000 - ₹ 60,000}{₹ 1,00,000} \times 100 = 40\%$$

$$(ii) \quad \text{Break-even Point in ₹} = \frac{F}{\text{P/V Ratio}} = \frac{30,000}{40\%} = 30,000 \times \frac{100}{40} = ₹ 75,000$$

$$(iii) \quad \text{Margin of Safety in ₹} = \text{Actual Sales} - \text{B.E.P. Sales in ₹} = ₹ 1,00,000 - ₹ 75,000 = ₹ 25,000$$

$$\text{or Margin of Safety} = \frac{\text{Profit}}{\text{P/V Ratio}} = \frac{10,000}{40\%} = \frac{10,000 \times 100}{40} = ₹ 25,000$$

$$\text{Where, Profit} = \text{Sales} - \text{Variable Cost} - \text{Fixed Cost} = ₹ 1,00,000 - ₹ 60,000 - ₹ 30,000 = ₹ 10,000$$

Illustration 7: Consider the following data:

Year	Sales (₹)	Profit/Loss (₹)
2006	₹ 2,00,000	₹ 10,000 Loss
2007	₹ 5,00,000	₹ 20,000 Profit

Calculate: (i) P/V Ratio, (ii) Break-even point, (iii) Variable Costs of each year, (iv) Required Sale to earn a profit of ₹ 40,000.

Solution:

(i) P/V Ratio:

$$\begin{aligned} \text{P/V Ratio} &= \frac{\text{Change in Profit}}{\text{Change in Sales}} \times 100 \\ &= \frac{20,000 - (-10,000)}{5,00,000 - 2,00,000} \times 100 \\ &= \frac{30,000}{3,00,000} \times 100 = 10\% \end{aligned}$$

(ii) Break-even Point in ₹:

$$\text{B.E.P. in ₹} = \frac{\text{Fixed Cost}}{\text{P/V Ratio}} = \frac{30,000}{10\%} = ₹ 3,00,000$$

Where,

$$\begin{aligned}\text{Fixed Cost} &= (\text{Sales} \times \text{P/V Ratio}) - \text{Profit} \\ &= (5,00,000 \times 10\%) - 20,000 \\ &= ₹ 50,000 - 20,000 = ₹ 30,000\end{aligned}$$

(iii) Variable Cost of each year:

$$\begin{aligned}\% \text{ of Variable Cost to Sales} &= 100 - \% \text{ of P/V Ratio} = 100 - 10\% \\ &= 90\%\end{aligned}$$

$$\begin{aligned}\therefore \text{Variable Cost in 2006} &= 90\% \text{ of Sales of 2006} \\ &= 2,00,000 \times 90\% = ₹ 1,80,000\end{aligned}$$

$$\begin{aligned}\therefore \text{Variable Cost in 2007} &= \text{Sales} \times 90\% \\ &= 5,00,000 \times 90\% = ₹ 4,50,000\end{aligned}$$

(iv) Required Sale to earn a profit of ₹ 40,000:

$$\begin{aligned}\text{Sales} &= \frac{\text{Fixed Cost} + \text{Desired Profit}}{\text{P/V Ratio}} \\ &= \frac{30,000 + 40,000}{10\%} = \frac{70,000 \times 100}{10} \\ &= ₹ 7,00,000\end{aligned}$$

Notes

9.8. Limitation of Break-even Analysis

From the above explanations of the use and application of break-even and profit charts, it proved that they are important managerial tools but they should be interpreted carefully as they suffer from certain limitations as explained below.

1. Break-even and profit charts give only bird's eye-view of the cost-volume and profit position. The determination of exact profit or loss for a given output and price requires a lot of care on the part of one who draws chart. A little deviation may give different result.
2. The analysis is based on the assumption that the total costs can be split into fixed and variable components and fixed costs remain the same for all levels of output. In practice, the separation of costs into fixed and variable components is full of difficulties and the component of fixed cost remains the same only up to a certain level of output. Fixed cost is bound to go up if additional capacity of production has to be created.
3. The assumption of linear relationship between sales and variable cost is also not realistic under the varying technological and economic conditions in a modern era. In a simple break-even chart, the total cost and total revenue curves are the straight lines because of the assumption of linear relationship between sales and variable cost. In actual practice, the business firm may revise their price policies due to change in demand. Similarly, variable cost per unit for additional production goes down if additional supplies of raw materials are available at reduced rates.
4. The B.E.P analysis assumes that production and sales are equal. In fact, whatever is produced is not sold in the same period, and some stock has

Notes

to be carried to the next period. Opening and closing stocks are generally found in all types of business concerns.

5. Break-even charts are suitable only to represent a single product or combined position of a fixed product-mix. To know the profitability of individual products, profit path graph has to be drawn but this graph does not depict the cost and revenues of sales-volumes.
6. The production technique and efficiency of factors of production is assumed as remaining the same. It is not proper to assume constant conditions of work when the enterprise is moving towards the path of expansion and development.

9.9. Summary

- The traditional technique to calculate the cost of production is the absorption Costing Technique, according to this total cost involved in a production is aggregated without any regard to its constituents.
- Marginal cost means the cost of marginal or last unit produced. In this connection, a unit may mean a single commodity, one dozen, a gross or any other packet of goods.
- Marginal costing is also called 'Variable Costing'. It may be defined as, "*the technique which charges only the variable costs to the cost units*". In this technique, cost of a unit consist only of out-of-pocket costs, which are direct, variable or avoidable costs.
- Fixed costs are treated as period costs and written off in full against the total contribution or income of the period in which they are incurred.

9.10. Review Questions

1. What do you mean by marginal costing?
2. Differentiate between absorption costing and marginal costing.
3. Discuss the main features of marginal costing.
4. Discuss advantages and disadvantages of marginal costing.
5. What do you mean by Cost-Volume-Profit analysis?
6. Write short notes on:
 - (a) Graphic method of break-even analysis
 - (b) Limitations of break-even analysis
7. Discuss relation between marginal costing and differential costing.
8. The following figures are submitted for a year's working of a factory:

Budgeted output	=	80,000 units
Fixed expenses	=	₹ 4,00,000
Variable expenses per unit	=	₹ 10
Selling price per unit	=	₹ 20

Prepare a break-even chart on a graph paper to show break-even point and also determine new B.E.P. if selling price is reduced to ₹ 18.

9. From the following data, you are required to calculate the B.E.P. and sales value at this point:

Selling price per unit = ₹ 25

Fixed overheads = ₹ 24,000

Direct material cost per unit = ₹ 8

Variable overheads = @ 60% on Direct Labour

Direct labour cost per unit = ₹ 5

Trade discount = 4%

If sales are 15% and 20% above the Break-Even Volume, determine the net profits.

10. The relationship between sales and cost in a Ria Ltd. is as follows:

Sales	Total Costs
₹ 50,000	₹ 40,000
₹ 90,000	₹ 60,000

Calculate the following: (i) Break-even point of the business, (ii) Profit at an estimated sale of ₹ 1,00,000, (iii) Sales required to earn a profit of ₹ 20,000, (iv) Total cost at a sale of ₹ 80,000.

Notes

Budgetary Control

Notes

Structure

- 10.1. Budget–An Introduction
- 10.2. Concept of Budgetary Control
- 10.3. Organisation for Budgetary Control System
- 10.4. Types of Budget
- 10.5. Zero-Base Budgeting
- 10.6. Programme Budgeting
- 10.7. Performance Budgeting
- 10.8. Summary
- 10.9. Review Questions

10.1. Budget–An Introduction

Budgetary planning and control is an effective management tool for planning, coordinating and controlling the various business activities. As a planning device, it guides executives to anticipate the influence and impact of a given set on the firm's business and its resources.

A budget is a record plan of action. It is a statement of anticipated results either in financial terms or even in non-financial. According to the Institute of Company Secretaries of India, "*Budget as a plan represents a statement of expected results expressed numerically*". **Gordon and Scollinglaw** state, "*Budget is a predetermined detailed plan of action developed and distributed as a guide to current operations and as a partial basis for the subsequent evaluation of performance.*"

"A budget is a financial or quantitative statement prepared and approved prior to a definite period of time of the policy to be pursued during that for the purpose of attaining a given objective."

– ICWA, England

"Budget are financial and or quantitative statements 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."

– John Sizer

A budget is a detailed schedule of the proposed combinations of the various factors of production which the management deems to be the most profitable for the ensuring period. It may be a forecast of sales, production costs, distribution costs, and administrative and financial expenses – and, therefore, of profit or loss. It serves as road map for executives and let them know when the company is staying from its planned route.

A budget have the following characteristics:

1. A budget is a document in writing.
2. It pertains to a policy which is to be executed during budget period.
3. It relates to a defined period in future.
4. A budget is expressed in terms of physical quantities, money values or both.
5. Some specific objectives are to be achieved through the establishment of budgets.
6. Budgets provide is basis or standard for comparison with actual performance for control purposes.

Notes

10.2. Concept of Budgetary Control

Budgetary control is a systematic process of planning the best use of resources to achieve a business objective. It is a tool in the hands of planner which reaches through coordination into control and ties the three aspects firmly together. In the words of *J.Batty*, "Budgetary control is a system which uses budgets as a means of planning and controlling all aspects of producing and/or selling commodities or services". According to *J.A.Scott*, "It is the system of management control and accounting in which all operations are precast and so far as possible planned ahead and the actual results compared with the forecasted and planned ones".

The institute of Cost and Management Accounts, England defines budgetary control as, "the establishment of budgets relating to the responsibilities of budgets relating to the responsibilities of executives to the requirements of a policy and the continuous comparison of actual with budgeted results, either to secure by individual action the objective of that policy or to provide a basis for its revision".

According to above discussions, *budgetary control is a process of managing an organization in accordance with an approved budget in order to keep total expenditure within authorised limits. It is designed to assist management in deciding the future course of action and to develop basis for evaluating the efficiency of operations.* Thus, a budgetary control consists of:

- (i) Preparation of budgets for major activities of the business;
- (ii) Measurement and comparison of actual results with budgeted targets;
- (iii) Computation of deviation, if any; and
- (iv) Revision of budget, if required.

Budgetary control requires preparation and designing of the budgets revealing clearly the financial responsibilities of executives in relation to the requirements of the overall policy of the company followed by a continuous comparison of actual business results with budgeted results of secure the objectives of the policy. If the principles of budgeting are carried out in a proper manner, the company can be assured that it will efficiently use all of its resources and achieve the most favourable results possible in the long run.

Notes

Characteristics

There are some important characteristics of budgetary control system such as:

1. Budgetary control involves the establishment and preparation of departmental budgets, *i.e.* budgets for different types of activities like sales, purchases, production, capital equipment, cash etc.
2. It specifies the responsibilities of the department heads that are required to achieve the targets set out in the budgets for the realisation of business objectives.
3. It calls for continuous comparison of actual results with the budgeted specification for the purpose of controlling activities concerning production and sales.
4. Budgetary control is aimed at enhancing overall efficiency and profitability of an organisation through proper planning, coordination and control of activities for which budgets are prepared.
5. Budgets may be revised. If found necessary.

Objectives

The main objectives of the budgetary control are as under:

1. The success of a business organisation is subject to the accuracy and reliability of its targets. Budgets providing useful information of formulating future business policies.
2. Effective budgetary control helps in exercising control over costs by preparing separate budgets for each department. Causes of wastage are ascertained and arrangements are made for their removal. Thus, budgetary control helps in economising cost of production.
3. Budgetary control is a powerful tool of business administration as it helps in evaluating the results of various policies and facilitates supervision over the various factors of production.
4. It eliminates the danger of over capitalisation and under capitalization by determining the total capital requirements of a business firm through production budget. Accurate estimates of fixed and working capital requirements are formed.
5. It locates deficiencies in production system easily as separate production budget is prepared to ascertain the efficiency of production.
6. It encourages research and development as budgetary control schemes are usually based on past experience.
7. Budgeting fills the communication gap between management and employees through departmental budgets which are used as a vehicle to communicate the targets in explicit terms to various levels of managements. Budgeting aims at effective delegation of authority and decentralisation the functional budgets to different levels of management.
8. Budgeting aims at effective delegation of authority and decentralisation of responsibility. This objective is achieved by communicating the functional budgets to different levels of management.

Advantages

Budgeting system itself does not ensure good planning or control but it helps executives to plan ahead exercise control over people and operating events. Budgeting operations for the period ahead provides information on probable future profits and the men, materials, facilities and financing required to make those profits. The most advantages are as follows:

1. Budgeting is a disciplined approach to coordinate the planning of all functional executives towards the common profit making goal.
2. Budgeting motivates to think ahead by requiring them to formalise their planning efforts.
3. Budgeting gives management a means for self-evaluation as it provides goals and objectives against which performance can be evaluated without any difficulty. Every member of the organisation is clear about the targets as expected to be achieved by him.
4. A sound budgeting process provides opportunity to predetermine what profits and cost should be under various alternative operating conditions. The comparative analysis of the costs and benefits of the projects evaluates the most appropriate allocation of resources.
5. Budgeting provides a framework that specifies measurable periodic objectives the basis for solving these problems or avoiding them before they occur.
6. Budgets help to trace out expected problems from a operation and provides the basis for solving these problems or avoiding them before they occur.
7. With the installation of budgeting system employees of the organisation become conscious of the needs to conserve business resources.
8. A firm can enjoy benefits of the decentralisation with the help of budgetary control.
9. A budgetary control makes it obligatory for the enterprise to maintain adequate financial records that can be associated with the budget.
10. Budgetary process is an effective communication system, by serving as an excellent vehicle for the exchange of ideas and coordination of plans among various levels of management.
11. Efficient and inefficient use of resources is revealed by budgets intended for that purpose.
12. The participation of employees in the preparation and execution of the plans increases the morale among them, which in turn contributes maximum to the output.
13. Budgetary control helps a company to meet market competition efficiently by keeping the cost at minimum level.

Limitations

Despite the benefits mentioned above, the budgetary control suffers from serious limitations. Management must keep them in mind while using the tool of budgetary control. Following are the drawbacks of the budgeting system:

Notes

Notes

1. Budget estimates are often wrong as they are based on approximations and personal judgements. Therefore, the quality of budgets is associated with the intelligence, skills and experience of the budget persons.
2. Budgeting premises change rapidly with the change in business conditions. In the present day business, the frequency of change in business conditions is known to all. With the result, business executives face lot of difficulties in the execution of the budgets.
3. The success of budgeting largely depends on its execution which in turn depends on the cooperation and participation of all levels of management. Every member of the organisation must direct his efforts to achieve the objectives of the budget. Any lapse in their coordination or cooperation may result in poor performance.
4. The installation of budgeting system, is costly affair and therefore, small organisations may not afford it. Even financially sound enterprises must adopt the budgeting system after analyzing properly the cost and benefits of the system.
5. Budget targets sometimes are considered as pressure tactics which lowers the morale of the employees.
6. Budgeting is a time consuming process as a good amount of time is wasted in the preparation, evaluation and revision of the budgets.
7. There is an old saying to the effect that "*A man is usually down or what he isn't upon*". Often executives do not realise the utility of the budgeting system.
8. Under budgetary control system every budget centre tries to achieve targets set for it without taking into consideration the targets set for other budget centre and overall objectives of the budgetary control. All this results in the conflict which ultimately interrupts the efficiency of the budgeting system.

Essential Characteristics of a Good Budgetary Control

A good budgetary control possesses the following essential characteristics:

1. There must be a common authority to enjoy the rights and privileges as well as to fulfil the obligation. Actual users must be consulted before actually allocating different resources.
2. The supervisory staff must be held responsible for all the functions of the business and proper utilisation of all the resources of the business.
3. Independence of action must be ensured to the administration in those matters for which they are accountable. In such matters, they must be consulted and their views must be given due weight.
4. One who gives orders must also provide facilities for the execution of those orders.
5. There must be test checking of the work at regular intervals and the results must be compared with the targets. Shortcomings must be ascertained and methods should be suggested to overcome them.

6. There must be some system for rewarding better results and penalising poor results. Incentives for better work must be provided. Inefficiency must not be allowed to go unrealised.

10.3. Organisation for Budgetary Control System

Notes

The proper organisation of budgeting system helps management in coordinating the entire management operational activity. Therefore, management must take due care in the installation of a sound budgetary control system which requires the following:

Budget Committee

Budgeting is a continuous process and it requires full attention of the management so that timely action is taken on issues concerning the preparation, maintenance and administration of budgets. Generally, the top management appoints a committee known as Budget Committee, works under the Budget Officer. A budget committee usually performs following functions:

1. Defines management policies relating to budgeting.
2. Prescribes general guidelines for the preparation of budgets.
Coordinates department activities through budgets.
3. Revises and approves the budgets as prepared by different divisional managers. In this process, it reconciles the divergent views of the departmental heads.
4. Receives budget performance reports to fix responsibilities and suggest corrective actions in case of less than expected performance of any department.
Suggests revision of budgets, if necessary.
5. Prepares master Budget which integrates the departmental budgets and also includes the estimated Profit and Loss Account and Balance Sheet.

Budget Period

A firm may budget for any time period. The time-span for budgeting will vary from organisation to organisation depending on number of factors such as nature of business, the degree of risk and uncertainty, financial resources, economic conditions, etc. The length of the budget period may be a week, a month, quarter of a year, or even more than a year. Firms do not have any set internal of time. The formal budget most often is prepared for a year and is divided into months or quarters of a year.

Under normal business conditions, it may be profitable to have at least a condensed budget for one year in advance as a basis for broad plans and policy decisions. The condensed budget should be revised quarterly to keep it a year ahead. At the same time, it may be described to have capital investment budgets running as much as five years ahead.

Budget Manual

Budget manual sets out the responsibilities of the various executives concerned with the budgeting system. According to the *Institute of Cost and Management*

Accountants, England budget manual is "a document which sets out, *inter alia*, the responsibilities of the persons engaged in, the route of, and the forms and records required for budgetary control".

Thus, its main contents are:

Notes

- (i) Principles and objectives of the budgetary control system;
- (ii) Responsibilities of persons engaged in a budgetary programme;
- (iii) Procedures to be followed for the preparation of budgets;
- (iv) Details of periodical budgetary reviews;
- (v) Time schedule indicating various stages in the process of budget;
- (vi) Role of the various executives in the organisation of the budget;
- (vii) Essential record to be maintained;
- (viii) Reporting and communication system to be installed;
- (ix) Scope, period and areas of budgets.

Budget Centre

Budget Centre represents the segment of the organisation for which budget is prepared. According to the Institute of Cost and Works Accountants (UK) budget centre is "*a section of the organization of an undertaking defined for the purpose of budgetary control*". Each such centre is under the control of a responsible officer who is accountable to the management for the proper execution of the budget in his centre. The budget evaluation becomes easy with the establishment of budget centres.

Considerations in Preparing Budget

The following important points must be borne in mind while preparing budget:

1. Budgets are prepared to achieve the objectives of the business. No useful budget can be prepared without a complete knowledge of objectives, nature and the policies of the business.
2. The duration of the budget must be determined according to the special circumstances of each business. Ordinarily, every company needs both short-term as well as long-term budgets. Short-term budgets are usually in the form of income, expenditure, cash and sales. Similarly, the examples of long-term budgets are capital expenditure, training of business personnel, and expansion of the business.
3. The persons who prepare the budgets must be honest and sincere. They should possess full knowledge of the nature, targets and the resources of the company. They must have foresight and competence to prepare well balanced budgets.
4. Adequate, accurate and reliable statistical information must be available for the preparation of a good budget. Past experience helps in projecting future.
5. Budget must be reasonably elastic and flexible. It must be capable of being adjusted and changed according to new changes.

6. An over enthusiastic business may fix-up extraordinary high targets. They may prove to be unrealistic or incapable of being achieved. Efforts made in preparing the budgets may go waste. To avoid these dangers, budgets must be prepared by men of experience and foresight. On the one hand, they will try to fix up the targets according to their resources and on the other hand, they will keep the targets of the previous budgets quite separate the new targets.

10.4. Types of Budget

All enterprises make plans some in systematic and formal way while others in informal manner. However, they differ in the budgeting practices. Generally, the large and medium firms have comprehensive system of budgeting, prepare budgets for all of their important operations but the small firms and some large and medium firms do not have comprehensive system of budgeting they prepare budgets for a few of their operations.

Different authorities have given different classification of budgets. Some classify them on the basis of functions involved, period covered, nature of transactions while others classify them according to activity levels. Classifications of budgets are as follows:

1. Based on activity levels:

- (a) Fixed Budget
- (b) Flexible Budget

2. Based on Period:

- (a) Long-Term Budget
- (b) Short-Term Budget

3. Based on nature of transactions:

- (a) Operating Budget
- (c) Capital Budget

4. Based on functional classification:

Master Budget

Subsidiary Budget

The important budgets are explained as follows:

1. Fixed Budget

The fixed budget is, generally, thought of as predetermined costs projected at a particular capacity level. That is, once capacity is projected at a particular level, the individual department gathers and classifies their costs at that level. The budget thus prepared will be known as a fixed budget. *Fixed budget is a plan that expresses only one level of estimated activity or volume.* Such a budget is also known as static budget. The term "fixed budget" is probably a misnomer because this budget really is never fixed. Business and economic conditions constantly change and management has to review and change the budgets in the light of those changes.

Notes

2. Flexible Budget

This is simply a series of fixed budgets that apply to varying level of production. According to institute of Cost and Works Accountants, London, a flexible budget is "a budget which by recognizing the difference between fixed, semi-fixed and variable costs, is designed to change in relation to the level of activity attained". Thus, a flexible budget is a series of cost budgets, each prepared for a different level of capacity. Capacity levels are set at percentages of capacity or at the production of a specified number of units at set levels of capacity.

Illustration 1. For production of 10,000 electrical automatic irons, the following are the budgeted expense:

	Per unit
Direct materials	₹ 60
Direct labour	30
Variable overheads	25
Fixed overheads (₹ 1,50,000)	15
Variable expenses (direct)	5
Selling expenses (10% fixed)	15
Administrative expenses (₹ 50,000) rigid for all levels of production	5
Distribution expenses (20% fixed)	5
Total cost of sales per unit	160

Prepare a budget for production of 6,000; 7,000; and 8,000 irons, showing distinctly, the marginal cost and total cost.

Solution.

Flexible Budget of Electrical Automatic Irons

Production	6,000 Units		7,000 Units		8,000 Units	
	Total (₹)	Per Unit (₹)	Total (₹)	Per Unit (₹)	Total (₹)	Per Unit (₹)
Direct material	3,60,000	60.00	4,20,000	60.00	4,80,000	60.00
Direct labour	1,80,000	30.00	2,10,000	30.00	2,40,000	30.00
Direct variable expenses	30,000	5.0	35,000	5.00	40,000	5.00
Variable overheads:						
Production	1,50,000	25.00	1,75,000	25.00	2,00,000	25.00
Selling	81,000	13.50	94,500	13.50	1,08,000	13.50
Distribution	24,000	4.00	28,000	4.00	32,000	4.0
Marginal cost	8,25,000	137.50	9,62,500	137.50	11,00,000	137.50
Fixed production overheads	1,50,000	25.00	1,50,000	21.43	1,50,000	18.75
Administrations overheads	50,000	8.33	50,000	7.14	50,000	6.25
Selling overheads	15,000	2.50	15,000	2.14	15,000	1.88
Distribution overheads	10,000	1.67	10,000	1.43	10,000	1.25
	2,25,000	37.50	2,25,000	32.14	2,25,000	28.13

Fixed cost						
Total cost (Marginal cost	10,50,000	175.00	11,87,500	169.64	13,25,000	28.13
Plus fixed cost)	10,50,000	175.00	11,87,500	169.64	13,25,000	165.63

Working Notes

	Selling expenses	Distribution expenses
Total for 10,000 units	1,50,000	50,000
Variable expenses: 90% and 80% respectively	1,35,000	40,000
Variable expenses per unit	13.50	4.00
Fixed expenses: 10% and 20% of total respectively	15,000	10,000

Notes

3. Operating Budget

The operating budget is a plan of the expected revenues and expenses from normal operations and activities. It is ordinarily set to cover one year period. The operating budget contains a detailed programme of activities that a firm wishes to perform during the budget period. Operating budget often states such performance measures which are not apparently seen in the financial statements. The best examples of operating budgets are raw material budget, inventory budget, labour force budget, etc.

4. Capital Budget

Capital budget is a plan of future investments in fixed assets and often includes amounts for large expenditure that have a long-term impact on the financial worth and prosperity of the firm. The activities covered under capital budget mainly relate to expansion, modernisation or betterment of the firm's productive resources. The outlay of capital budget is normally higher as compared to operating budget, therefore, such budgets require careful planning, analysis and evaluation. Such budgets aim to contribute maximum to the organisational goals and objectives.

5. Short-term Budgets

Short-term budgets have period of year or shorter. Firms prefer to prepare short-term budgets in the sales, cash overheads, etc. Such budgets are often broken down to shorter period for 6 months, 3 months and possible even each month. Experts claim that the shorter the period the more flexibility management has.

6. Long-term Budgets

Long-term budgets may cover periods of one, three, five and even more years depending upon the nature of the business. The responsibility for preparation of the long-term budgets, generally, rests with top level management. At that level, they are thinking of the long range plan of the company and basing their managerial decisions not only on internal factors but also external factors, such as competition, the economy today and what it is expected to be in the future, the stock market, international economic conditions, etc.

Notes

7. Master Budget

It is a summary of the budget schedules in capsule form made for the purpose of presenting in one report the highlights of the budget period.

Davidson and other state, "The master budget, something called the comprehensive budget is a complete blueprint of the planned operations of the firm for a period". Thus, master budget is an overall budget of the firm which includes all other small departmental budgets. It is network consisting of many separate budgets that are interdependent. It coordinates various activities of the business and puts them on correct lines. In fact, the master budget contains consolidated summary of all the budgets prepared by the organization.

Illustration 2: A limited company is formed to take over a running business. It has been decided to raise ₹ 55 lakhs by issuing equity shares, and the balance of capital required in the first six months is to be financed by a financial institution against an issue of ₹ 5 lakhs 8% debentures (interest payable annually) in its favour:

Initial outlay consists of:

Freehold premises	₹ 25 lakhs
Plant and machinery	₹ 10 lakhs
Stock	₹ 6 lakhs
Vehicles and other items	₹ 5 lakhs

Payments on the above items are to be made in the month of incorporation.

Sales during the first six months ending on June 30, 2008 are estimated as under:

January	₹ 14 lakhs	April ₹ 25 lakhs
February	₹ 15 lakhs	May ₹ 26.50 lakhs
March	₹ 18.50 lakhs	June ₹ 28 lakhs

Lay in payment:

Debtors	2 months
Creditors	1 month

Other information:

- Preliminary expenses: ₹ 50,000 (payable in February).
- General expenses: ₹ 50,000 per month (at the end of each month).
- Monthly wages and salaries (payable on the 1st day of the next month):
₹ 80,000 for the first three months
₹ 95,000 thereafter.
- Gross profit rate is expected to be 20% on Sales.
- The shares and debenture are to be issued on 1st January.
- The stock level throughout is to be the same as the outlay.

Prepare a cash budget, and a projected trading and profit and loss account for the six months ending June 30 and the projected balance sheet as on that date.

Solution:
Budgetary Control
Co. Ltd. Cash Budget for the Six Months Ending June 30, 2008

(In lakh of ₹)

Receipts	Jan	Feb (₹)	March (₹)	Apr (₹)	May (₹)	June (₹)	Total (₹)
Opening balance	—	13.50	1.30	2.80	2.50	0.50	—
Receipts:							
Shares	55.00	—	—	—	—	—	55.00
8% debentures	5.00	—	—	—	—	—	5.00
Sales	—	—	14.00	15.00	18.50	25.50	72.50
Total receipts	60.0	13.50	15.30	17.80	21.00	25.50	132.50
Payments:							
Fixed assets:							
Freehold premises	25.00	—	—	—	—	—	25.50
Plant and machinery	10.00	—	—	—	—	—	10.50
Vehicles	5.00	—	—	—	—	—	5.00
Preliminary expenses	—	0.50	—	—	—	—	0.50
Wages	—	0.80	0.80	0.80	0.95	0.95	4.30
General expenses	0.50	0.50	0.50	0.50	0.50	0.50	3.00
Purchases	6.00	10.10	11.20	14.00	19.05	20.25	80.90
Total payments	46.50	11.90	12.50	15.30	20.50	21.70	129.70
Closing balance	13.50	1.30	2.80	2.50	2.50	0.50	3.80
Total receipts	60.00	13.50	15.30	17.80	21.00	22.20	133.50

Notes
Projected Trading Profit and Loss Account for the Six Months Ending June 30, 20087

(In Lakh of ₹)

To Purchases	₹ 102.33	By Sales	₹ 127.00
"Wages and Salaries	₹ 5.25	" Closing stock	₹ 6.00
"Gross profit (20% on sales)	₹ 25.40		
	₹ 133.00		133.00
"Expenses	₹ 3.00	" Gross Profit b/d	25.40
"Debentures interest (6 months)	0.20		
"Net profit (subject to depreciation)	22.20		
	25.40		25.40

Projected Balance Sheet as on June 30, 2008

Notes

Liabilities	(₹)	Assets	(₹)
Equity share capital	55.00	Freehold premises	25.00
Profit and loss account	22.20	Plant and machinery	10.00
8% Debentures	5.00	Vehicles, etc.	5.00
Interest due	0.20	Stock	6.00
Wages and salaries outstanding	0.95	Debtors	54.50
Trade creditors	21.45	Preliminary expenses	0.50
	104.80		104.80

Working Notes:

- (i) **Purchases:** gross profit ratio is 20% on sales. Therefore, purchases will be equivalent to 80% of sales less wages. For example, in June sales are ₹ 28 lakhs and 80% thereof ₹ 22.40 lakhs. The amount of purchases for this month therefore will be 21.45 lakhs (*i.e.*, ₹ 22 lakhs less ₹ 0.95 lakhs for wages). The same method has been followed for other months.
- (ii) **Depreciation on fixed asset:** In the absence of any information no depreciation has been charged on the fixed assets.

8. Subsidiary Budgets

Subsidiary budgets are those budgets which show income or expenditure appropriate to or the responsibility of a particular activity of the business. There may be different kinds of subsidiary budgets depending on size, nature and policy of the concern but the following are frequently prepared:

- (i) Sales budget;
- (ii) Production budget;
- (iii) Material budget;
- (iv) Manufacturing overhead budget;
- (v) Expenses budget
- (vi) Cash-budget

(i) Sales Budget

Sales budget is the key budget that leads to the preparation of all other functional budgets. The success of any commercial enterprise largely depends upon the quick turnover of its production. A sales budget is an estimate of future sales expressed and incorporated in quantities and/or money. A company will have some sort of sales projection, which will be made on a periodic basis and the sales budget will be prepared based on both internal and external factors. The internal factors to be considered are such items as:

- (a) Past activity
- (b) Present and projected plant capacity
- (c) Proposed management policies
- (d) Financial position.

- (e) Sales force size
- (f) Availability of materials
- (g) Promotional campaign

External factors include such things as:

- (a) Extent of competition
- (b) Government policies and regulation
- (c) Economic conditions of the country
- (d) General trade prospectus

All the information is essential for the preparation of the budget. Management should review constantly the above-mentioned factors in order to find out the quantum of change in term and its impact on product demand

Illustration 3: ABC Co. Ltd operates two sales divisions by selling two quality cement products white and black in them. For the purpose of submission of sales budget to the budget committee, the following information has been made available.

Budget sales for the current year were as follows:

Product	Division I	Division II
White	800 at ₹ 100	600 at ₹ 100
Black	400 at ₹ 80	500 at ₹ 80

Actual sales for the current year were as follows:

Product	Division I	Division II
White	1,000 at ₹ 100	700 at ₹ 100
Black	600 at ₹ 80	450 at ₹ 80

The sales division of the company has taken the following decisions at a meeting:

- (i) The sales manager observed that product white is popular but underpriced. Therefore, the price of product should be increased by ₹ 20.
- (ii) The product Black has less market and the main reason responsible for it is the over price of the product. However, if the price of the product is reduced by ₹ 5, it is expected to generate more demand.

On the basis of these price changes and reports from the sales force, the following estimates have been prepared by divisional sales manager:

Percentage increases in sales over current budget

Product	Division I	Division II
White	5	20
Black	10	10

You are required to prepare a sales budget to be presented to the budget committee.

Notes

Solution:

Sales Budget MAS Co. Ltd.

Notes

Division	Product	Budget for Future Period			Budget for Current Period			Actual Sales for Current Period		
		Price Value			Price Value			Price Value		
		Qty.	(₹)	(₹)	Qty.	(₹)	(₹)	Qty.	(₹)	(₹)
I.	White	840	120	1,00,800	800	100	80,000	1,000	100	1,00,000
	Black	440	75	33,000	400	80	32,000	600	80	48,000
	Total	1,280		1,33,800	1,200		1,12,000	1,600		1,48,000
II.	White	720	120	86,400	600	100	60,000	700	100	70,000
	Black	550	75	41,250	500	80	40,000	450	80	36,000
	Total	1,270		1,27,650	1,100		1,00,000	1,150		1,06,000
Total	White	1,560	120	1,87,200	1,400	100	1,40,000	1,700	100	1,70,000
	Black	990	75	74,250	900	80	72,000	1,050	80	84,000
	Total	1,550		2,61,450	2,300		2,12,000	2,750		2,54,000

(ii) **Production Budget**

Production budget is a component of the master budget that establishes the level of production planned for budget period it fixed the target for the future output. Production budget attempts to estimate the number of units of each product that the company is planning to produce during the budget period. Sufficient goods will have to be available to meet sales needs and the quantity of inventory needed at the end of the period. A portion of these goods will already exist in the form of beginning inventory. The quantity to be produced is decided after taking into consideration the following:

- (i) Opening and closing levels of inventories; and
- (ii) Quantity required to meet projected sales

Further, budget executive has also to analyse the below mentioned factors in the preparation of production budget;

- (i) Maximum production capacity of the business;
- (ii) Production planning of the concern;
- (iii) Managing policy regarding produce or purchase of components;
- (iv) Available storage facilities; and
- (v) Amount of investment required.

The manufacturing division must schedule its production in such a way as to ensure prompt deliveries to the customers. To achieve the objective sales department must be closely coordinated with the production department.

Illustration 4: From the following information prepare a production budget for 3 months of LUCK Cement Co. Ltd.

- (i) The estimated sales for the budget period as reported by sales manager are:

Types of Products

Division	White (Tonnes)	Black (Tonnes)	Red (Tonnes)	Green (Tonnes)
North	7,000	12,000	16,000	10,000
South	5,000	8,000	10,000	3,000

Notes

(ii) Estimated Stock on June 1, 2007

Type of Product	Tonnes
White	1,200
Black	1,500
Red	1,800
Green	1,200

(iii) Desired closing stock on 31st August, 2007

Type of Product	Tonnes
White	1,500
Black	1,800
Red	1,400
Green	1,000

Solution:

Production Budget for Three Months from June to August, 2007

Estimated Sales During Budget Period	Types of Product			
	White (Tonnes)	Black (Tonnes)	Red (Tonnes)	Green (Tonnes)
North	7,000	12,000	16,000	10,000
South	5,000	8,000	10,000	3,000
Total	12,000	20,000	26,000	13,000
Add: Desired stock on 31st August, 2007 (closing stock)	1,500	1,800	1,400	1,000
	13,500	21,800	27,400	14,000
Less: Estimated stock On June 1st, 2007 (opening stock)	1,200	1,500	1,800	1,200
Quantity to be produced	12,300	20,300	25,600	12,800

(iii) Materials Budget

Materials budget is prepared with a view to ensure regular supply of raw material of the required quantity according to the requirements of production schedules. A schedule of materials requirement is prepared, indicating for each product the unit quantities of each material required per unit of finished product.

The quantity material required for production and the required inventor level will yield the quantities of each material which will have to be

Notes

available during the budget period. The available quantity of material estimated should be deducted by the inventories of raw material at the beginning of the budget period; the resultant material quantity is the quantity of material to be purchased during the budget period.

(iv) **Manufacturing Overhead Budget**

The manufacturing overhead budget is a schedule showing the expected amount of manufacturing cost that will be incurred for the budgeted level of activity. Manufacturing overheads consists of fixed, variable and semi-variable cost components. Management has to use some equitable basis to apportion the fixed overheads and the fixed elements of the semi-variable overheads to the various budget centres. Therefore, the preparation of the Manufacturing Overhead Budget requires experience, knowledge, expertise and intelligence on the part of the budget persons.

(v) **Expenses Budget**

Once the production plans have been established, it is time to determine the overhead required to produce the products. Departmental managers ordinarily prepare their own budgets for indirect labour and factor overhead.

Expenses budget consists of several sections namely factory overheads, administration expenses, and sales and distribution expenses. These budgets are prepared on the basis of figures of income statements of the previous years. A proper distinction of recurring and non-recurring is made while preparing these budgets.

(vi) **Cash Budget**

The availability of cash in adequate quantity at proper time for a reasonable cost is very essential for smooth operation of a business. The cash budget attempts to estimate cash requirements of a business well ahead of time. According to **Soloman**, "*the cash budget is an analysis of flow of cash in a business over a future, short or long period of time. It is a forecast of expected cash intake and outlay*".

This budget is significant because it helps management in planning to avoid unnecessary idle cash balances on the one hand or unneeded expensive borrowings on the other. It indicates not only the total amount of financing required but its timing as well. The cash budget is mainly composed of two major sections, viz.,

(i) The receipt section; and

(ii) The payment section

Thus, the cash receipts are expected to be generated from the following sources:

(a) Cash sales;

(b) Collection from debtors;

(c) Non-operating incomes like dividend, commission, interest, etc.;

(d) Sale proceedings from capital assets;

(e) Share capital and debentures; and

(f) Loans and overdrafts.

The major items of payments are:

- (a) Payment for various inputs like materials, labour and machinery;
- (b) Payment of loans and deposits;
- (c) Redemption of capital and debentures; and
- (d) Investments.

The difference between cash receipts and payments represents *cash average or shortage*. If a shortage exists, the company will have to arrange for raising the cash through bank loans or other financing methods. If an excess exists, funds borrowed in previous period can be repaid, or the idle funds can be temporarily invested.

Cash budgets may be prepared in three forms that, while quite different in appearance, require the same estimates and result in the same forecast cash balance at the end of each period. The methods are:

1. Receipt and Payment Method;
2. Adjusted Profit and Loss method; and
3. Balance Sheet Method.

1. Receipt and Payment Method

Illustration 5: From the following budgeted Figures, prepare a Cash Budget in respect of three months to June 30:

Months	Sales (₹)	Materials (₹)	Wages (₹)	Overheads (₹)
January	60,000	40,000	11,000	6,200
February	56,000	48,000	11,600	6,600
March	64,000	50,000	12,000	6,800
April	80,000	56,000	12,400	7,200
May	84,000	62,000	13,000	8,600
June	76,000	50,000	14,000	8,000

Expected Cash Balance on 1st April ₹ 20,000. Other information:

- (a) Materials and overheads are to be paid during the month following the month of supply.
- (b) Wages are to be paid during the month in which they are incurred.
- (c) **Terms of Sales:** The terms of credit sales are payment by the end of the month following the month of sales; half of the sales are paid when due, the other half to be paid during the next month.
5% sales commission is to be paid within the month following actual sales.
- (d) Preference dividend for ₹ 30,000 is to be paid on 1st May.
- (e) Share call money for ₹ 25,000 is due on 1st April and 1st June.
- (f) Plant and Machinery worth ₹ 10,000 is to be installed in the month of January and the payment is to be made in the month of June.

Notes

Cash Budget

Period three months ending June

Notes

Details	Months		
	April	May	June
	(₹)	(₹)	(₹)
Balance b/fd	20,000	32,600	- 5,600
Receipts:			
Cash from debtors:			
February Sales	28,000		
March Sales	32,000	32,000	
April Sales		40,000	40,000
May Sales			42,000
Share Call Money	25,000		25,000
Total Cash Available	1,05,000	1,04,600	1,01,400
Disbursements:			
Materials	50,000	56,000	62,000
Overheads	6,800	7,200	8,600
Wages	12,400	13,000	14,000
Sales Commission	3,200	4,000	4,200
Preference Dividend		30,000	
Payment for Plant and Machinery			10,000
Total Disbursements	72,400	1,10,200	98,800
Balance c/d	32,600	- 5,600	2,600

Illustration 6: From the following forecasts of income and expenditure, prepare a cash budget for the half year ended on 30th June 2008:

Month	Sales	Purchase	Wages	Manufacturing	Admini- stration	Selling
	(Credit)	(Credit)		Expenses	Expenses	Expenses
	(₹)	(₹)	(₹)	(₹)	(₹)	(₹)
2004 Nov.	25,000	10,000	2,500	1,100	1,000	600
Dec.	30,000	15,000	2,800	1,200	975	650
2005 Jan.	20,000	10,000	2,000	1,250	1,060	550
Feb.	25,000	15,000	2,200	1,150	1,040	650
March	30,000	17,500	2,400	1,300	1,105	750
April	35,000	20,000	2,600	1,350	1,120	800
May	40,000	22,500	2,800	1,450	1,180	825
June	45,000	25,000	3,000	1,500	1,185	875

1. A sales commission of 5% on sales and due two months after sales, is payable in addition to the above selling expenses.
2. Capital Expenditure-Plant purchased, 1st January for ₹ 10,000, its payment being immediately due; Building purchased in January for ₹ 80,000, payable in two half-yearly installments, the first in February.
3. A dividend of ₹ 5,000 (net) is payable in April.
4. Period of credit allowed by creditors and to customers is 2 months.
5. Lag in payment of wages – 1/8th month.
6. Lag in payment of other expenses – 1 month
7. Cash Balance on January 1, 2005 was expected to be ₹ 37,500.

Notes

Solution:**Cash Budget**Period half-year ending: 30th June 2007

Details	Months					
	Jan.	Feb.	March.	April	May	June
	(₹)	(₹)	(₹)	(₹)	(₹)	(₹)
Receipts:						
Balance b/d	37,500	36,325	4,790	8,575	6,595	11,550
Cash realised from debtors	25,000	30,000	20,000	25,000	30,000	35,000
Cash Available	62,500	66,325	24,790	33,575	36,595	46,550
Payments:						
Accounts Payable	10,000	15,000	10,000	15,000	17,500	20,000
(Purchases)						
Wages	2,100	2,175	2,375	2,575	2,775	2,975
Manufacturing Expenses	1,200	1,250	1,150	1,300	1,350	1,450
Administration Expenses	975	1,060	1,040	1,105	1,120	1,180
Selling Expenses	650	550	650	750	800	825
Sales Commission	1,250	1,500	1,000	1,250	1,500	1,750
Plant purchased	10,000	—	—	—	—	—
Building purchased	—	40,000	—	—	—	—
Dividend paid	—	—	—	5,000	—	—
Cash Disbursements	26,175	61,535	16,215	26,980	25,045	28,180
Balance c/fd.	36,325	4,790	8,575	6,595	11,550	18,370

2. Adjusted Profit and Loss Method

Under this method the profit forecast for the budget period is adjusted for non-cash transactions and for expected changes in assets and liabilities not involved in the calculation of profit. Thus, net estimated profit for the budget period is increased by the amount of non-cash transactions like depreciation, provisions, outstanding expenses, etc. which in turn is added

Notes

by capital receipts, reduction in assets and increase in liabilities to form total cash receipts. The amount so calculated is reduced by the amount resulting from payment of dividends, prepayments, increase in assets and decrease in liabilities. The resultant figure will be the amount cash available at the end of the budget period. Top management always prefers to use adjusted profits and loss for cash forecasting but most firms are compelled to use the line-by-line estimate to provide the detailed information needed by lower management levels for control. The essential information for the preparation of adjusted profit and loss account is supplied from profit and loss account and balance sheet.

(A) Items to be added:

1. **Non-cash items of expenses** : These items are debited to Profit and Loss Account but do not incur cash outflow. Such items may be the following: (i) Depreciation, (ii) Deferred Expenses written off, (iii) Intangible assets written off, (iv) Preliminary Expenses written off.
2. **Change in assets, liabilities and net worth between two periods which increase cash**: They are as follows: (i) Decrease in closing stock, (ii) Decrease in sundry debtors and bills receivable, (iii) decrease in investments and other marketable securities, (iv) increase in sundry creditors and bills payable and other liabilities, (v) increase in loans and advances, (vi) tax payable, (vii) accrued expenses, (viii) sale of plants and other fixed assets, (ix) issue of share capital, (x) issue of debentures.

(B) Items to be deducted:

1. **Non-cash items of income**: These are such items of income on which income will be earned during the budget period but which would not be received, e.g., accrued rent, accrued interest, accrued dividend, accrued royalty, etc.
2. **Changes in assets, liabilities and net worth between two periods which decrease cash balance** : These may be as follows:
3. (i) Increase in closing stock, (ii) increase in sundry debtors, (iii) increase in investments (iv) increase in bills receivable, (v) decrease in sundry creditors, bills payable and other liabilities, (vi) decrease in outstanding expenses, (vii) redemption of debentures or preference shares, (viii) refund of capital, (ix) dividend payment, (x) purchase of fixed assets.

Illustration 7: The following data are available to you. You are required to prepare a cash budget according to adjusted profit and loss method.

Balance Sheet as on 1st Jan. 2005

<i>Liabilities</i>	<i>Amount (₹)</i>	<i>Assets</i>	<i>Amount (₹)</i>
Share Capital	1,00,000	Premises	50,000
General Reserve	20,000	Machinery	25,000
Profit and Loss A/c	10,000	Debtors	40,000

Creditors	50,000	Closing Stocks	20,000
B/P	10,000	B/R	5,000
Outstanding Rent	2,000	Prepaid Commission	1,000
		Bank	51,000
	1,92,000		1,92,000

Projected Trading and Profit and Loss Account
(For the year ending 31st Dec. 2005)

	(₹)		(₹)
To Opening Stock	20,000	By Sales	2,00,000
To Purchases	1,50,000	By Closing Balance	15,000
To Octroi	2,000		
To Gross Profit c/d	43,000		
	2,15,000		2,15,000
To Interest	3,000	By Gross Profit b/d	43,000
To Salaries	6,000	By Sundry Receipts	5,000
To Depreciation (on Plant and Machinery)	7,000		

	(₹)		(₹)
To Rent	6,000		
Less: O/s for last year	2,000		
	4,000		
Add: O/s for current year	1,000	5,000	
To Commission	3,000		
Add Last year's prepaid	1,000	4,000	
To Office Expenses	2,000		
To Advertisement Expenses	1,000		
To Net Profit c/d	19,500		
	48,000		48,000
To Dividends	8,000	By Balance of profit from last year	10,000
To Additions to Reserve	4,000	To Net Profit b/d	19,500
To Balance c/d	17,500		
	29,500		29,500

Closing Balance: Share Capital ₹ 1,20,000; 10% Debentures ₹ 30,000; Creditors ₹ 40,000; Debtors ₹ 60,000; B/P ₹ 12,000; B/R ₹ 4,000; Furniture ₹ 15,000; Plant 50,000 (Furniture and Plant are to be purchased at the end of the year).

Solution:

Cash Budget

	(₹)	(₹)
Opening Balance as on 1st Jan. 2005		51,000
Add: Net Profit for the year	19,500	

Notes

Depreciation	7,500	
Decrease in B/R	1,000	
Increase in B/P	2,000	
Issue of Share Capital	20,000	
Issue of Debentures	30,000	
Decrease in Stock	5,000	86,000
		1,37,000
Less: Purchase of Plant	50,000	
Purchase of Furniture	15,000	
Increase of Debtors	20,000	
Decrease of Creditors	10,000	
Decrease in Outstanding Rent	1,000	
Dividends paid	8,000	1,04,000
Closing Balance as 31st Dec. 2005		33,000

3. Balance Sheet Method

Under this method the cash balances at the end is computed with the help of projected balance sheet. The projected balance sheet is developed by beginning with the current balance sheet and adjusting it for the data contained in the other budgets. All the balance sheet items except cash balances are adjusted in the light of changes that might take place between current balance sheet and the projected balance sheet. The difference between projected assets and projected liabilities represents cash balance.

Illustration 8: Premier Ltd. has ₹ 50,000 Share Capital and ₹ 6,000 Reserve against ₹ 40,000 invested in Fixed Assets. Stock and Debtors were ₹ 4,000 and ₹ 13,000 and Trade Creditors were ₹ 2,000. To sustain the increase in activity, stock level is proposed to be increased by 100% by the end of the year. Machinery worth ₹ 2,000 is proposed to be acquired during the year as per Capital Expenditure budget. Estimated profit for the year is ₹ 7,000 after charging ₹ 4,000 depreciation and 50% of profit for taxation. Advance income-tax payment is estimated at ₹ 6,000. Trade Creditors are likely to be doubled. A 5% dividend is to be paid and provision for 10% dividend for next year is to be made. Debtors are estimated to be outstanding for 2 months. Sales budget shows ₹ 1,50,000 sales.

Make an estimate of cash position as at the end of budget period.

Solution:

Budgeted Balance Sheet as at

	(₹)		(₹)
Share Capital	50,000	Fixed Assets	40,000
Reserves and Surplus:	₹	Additions	2,000
Reserves	6,000		42,000
Profit for the year	7,000	Less: Depreciation	4,000
			38,000

	13,000		Current Assets:	
Less: Last year's loss	1,000		Stock	8,000
	12,000		Debtors	25,000
Less: Dividend paid 2,500			Advance Income-Tax	6,000
Provision for Div. 5,000	7,500	4,500		
Current Liabilities:				
Trade Creditors		4,000		
Provision for Income-Tax		7,000		
Provision for Dividend		5,000		
Bank Overdraft		6,500		
(balancing figure)				
		77,000		77,000

Notes

10.5. Zero-Base Budgeting

Traditional method of budgeting known as incremental based budgeting is based on past year's programmes and performance which is generally regarded as satisfactory for developing future budget. In this type of budgeting, the targets set in the past year are not questioned and some additions are made in the last year's budget itself to incorporate the necessary additional expenditure on on-going and new business activities to be carried out in the budget period. This is a very simple method which calls for few alternations and additions without going into the details of the whole budgeting process in the light of changed circumstances.

Zero-base budgeting pre-supposes the non-existence of any budget in the past and evaluates the budget activities in terms of benefits and costs in the light of prevailing business environment and likely changes in future. It is synonymous with budgeting from scratch—from zero, requiring justification of everything irrespective of trends or past levels of expenditure. In other words, Zero-base budgeting implies constructing a budget without any reference to what has gone before. It is essentially an exercise of reappraisal of purposes, methods and resources. The budget so prepared is likely to be more realistic to serve the best interests of an organisation.

Zero-Base Budgeting (ZBB) as a system of budgeting was used by the U.S. Department of Agriculture for a year in 1964. It was developed in its present form by **Peter A. Phyrre** at the Taxes instrument, U.S.A. It was given a boost subsequently by Jimmy Carter who as the governor implemented the system in the state of Georgia and later as the President in the Federal Government. Government of India proposed the adoption of Zero-base concept in the budget preparation for the year 1987-88 onward.

Steps Involved in Zero-Base Budgeting

The zero-base budgeting consists of the following steps:

1. Organisational and budgeting objectives should be carefully laid down.
2. The areas of business where zero-base budgeting is to be applied should be identified.

Notes

3. The organisation must be divided in small segments, *i.e.* budget units, for effective analysis and evaluation.
4. The incharge executive of the budget unit must prepare alternative spending plans as decision packages.
5. The decision packages should be evaluated on the basis of cost and benefit analysis and ranked in order of priorities.

The critics of the zero-base concept argue that an annual in-depth defense of all programmes may be too time consuming and too costly to be really feasible. They suggest that periodic reviews should be made only every two or three years. Such period review would ensure minimum assessment cost with maximum efficiency. However, the decision of frequency of Zero-base reviews is governed by number of factors such as nature of business, nature of activity, time and cost involved in review, organisational structure, etc.

Benefits from ZBB

Following benefits accrue to an organisation which implements Zero-Base Budgeting on the right basis:

1. Continuous reviewing of on-going schemes ensures effective utilisation of limited funds in the best possible projects and manner.
2. The programmes or activities which have outlived their utility are pruned and thus the organisation can be saved from unproductive expenditure.
3. Ranking of projects and programmes on cost-benefit analysis basis secures an efficient allocation of funds.
4. It facilitates the accommodation of high priority projects by reducing existing activities.
5. ZBB helps in the management of projects, programmes and activities according to availability of funds. If the cuts in budgets become imperative due to shortage of funds, the BCR for different programmes will be a correct guide in such a decision-making. Instead of introducing *ad hoc* cuts in budgets, the activities making up to the quantum of funds available will be chosen.
6. It provides an in-built system for reviewing actual costs and performance against budget.
7. It improves communication all round, particularly top management's awareness of what is contained in each budget centre's proposal.
8. It promotes innovative ideas in terms of alternative ways of performance an activity and alternative levels of efforts.

Limitations of Zero-Base Budgeting

Zero-base budgeting from following serious limitations:

1. Zero-base budgeting is a costly affair; therefore, small organisation cannot afford it.

2. The annual reviews of the programmes become mechanical with the passage of time which makes main objective of the Zero-base concept lost.
3. The identification of decision units and decision packages creates number of problems for the organisation.
4. The process of zero-base budgeting requires experience, intelligence, expertise, and continuous training on the part of executives. Thus, it is not suitable for ordinary organisation.
5. It fails to find out a workable solution to a problem created by stopping funding on such current programmes that have turned unproductive. They may improve long-term, commitments or fixed investments that cannot easily be shifted to other areas.

Notes

10.6. Programme Budgeting

A program budgeting is a budgetary system tailored to meet the requirements of Government departments and non-profit institutions that focuses upon the output of the organisation rather than on specific outputs. According to **David Novick**, Programme budgeting is *"the sum of the steps of interdependent activities which enter into the attainment of a specified objectives"*. The not-for-profit organisation accepts such programme that contributes maximum benefits to the society. Therefore, it is not feasible to evaluate the program and projects on cost return (income) basis. An efficient programme budgeting may have the following characteristics:

1. **Program Accounting:** An accounting system with an ability to attach accounting data to specific programme to show the resources used or budgeted for each objective.
2. **Multi-year Costing:** It attempts to identify costs with a project for its total life rather than just for the future budget period.
3. **Detailed Description of Activities:** It involves designing and developing of activity description of each programme against which on-going programme and new programmes are evaluated.
4. **Zero-Base Budgeting:** A budgeting approach that attempts to review and evaluate on-going programme as well as new programmes to justify all resources. The evaluation process of the programmes begins without a resource commitment even it is an on-going programme.
5. **Benefit-Cost Analysis:** A formal technique that evaluates alternative course of action by comparing costs with benefits.

Objectives of Programme Budgeting

As per American Presidential order, the following are the main objectives of programme budgeting:

1. To identify national goals with greater precision and determine the priority among goals;
2. To develop and analyse alternative means of achieving the goals;

Notes

3. To project long-term costs and relate them to the benefits of each programme;
4. To specify plans for several years ahead that will achieve the stated objectives; and
5. To strengthen control over programmes and budgets through improved measurement and analysis of programme performance in relation to cost.

Limitations of Programme Budgeting

The main limitation of programme budgeting are:

1. It simply states about the programme to be done but fails to throw light on the operation and implementation process of the programme;
2. The concept of program budgeting has no relevance to the preparation of actual budget;
3. It does not provide an operating tool for the line executives who implement the policy and programme decisions;
4. The mechanism for funding the programmes and fixing priorities for varying levels of effort are not stated in programme budgeting;
5. It does not focus on the evaluation of on-going programme activities and operations but stresses only on new programmes.

10.7. Performance Budgeting

The budgeting adopted by private entrepreneurs is, generally, performance-oriented but it is not always true in case of government departments which set their targets in money values instead of physical quantities. Performance budgeting assumes special significance when government expenditure on developmental activities is desired to be evaluated in terms of physical targets. A government department may be satisfied if it is able to exhaust the funds allocated to it for a budget period without any regard to the amount of benefits derived from expenditure.

The concept of performance budgeting developed when the Hoover Commission recommended in 1949 that the performance budgeting should be adopted for budgeting the Federal Government expenditure. The Estimate Committee and administrative Reform Commission have also recommended the use of performance budgeting in government departments in India.

The performance budgeting consists of the following tasks:

1. Formulation of departmental objectives;
2. Identification, evaluation and selection of the programme;
3. Preparation and execution of budget; and
4. Performance appraisal.

Objectives

The performance budgeting seeks to achieve the following objectives:

1. To make budget formulation process simple;
2. To bring coordination between various physical and financial aspects of the programme;

3. To improve the efficiency and quality of performance audit;
4. To make management more accountable for its actions; and
5. To serve as controlling tool for financial operations.

Advantages

The major advantages of performance budgeting are given below:

1. It ensures efficient utilisation of resources by suggesting appropriate means of allocating funds to various programmes;
2. It provides a systematic and sound system for performance reporting evaluation of each program;
3. It makes possible the introduction of management-by-objectives;
4. It ensures achievement of the organisation objectives by identifying and selecting only such programmes which contribute maximum to these objectives;
5. It facilitates decision-making at all levels of management in the organisation;
6. It ensures smooth execution of the budget by coordinate its various physical and financial aspects;
7. It improves the quality of financial control.

Limitations

Despite above-mentioned qualities of performance budgeting, it suffers from the following limitations:

1. Performance budgeting evaluates only quantitative and financial variable of the programme and, therefore, it lacks qualitative approach to the evaluation of the programme which is equally important for the proper screening;
2. It can be used only for such programmes where evaluation can be done in a precise manner, therefore, its scope is limited; and
3. The use of performance budgeting requires the departments of an organisation well-organised and the programmes and activities properly identified which is rare to find, therefore, only a limited number of organisation can be benefited by this approach to budgeting.

10.8. Summary

- Budgetary planning and control is an effective management tool for planning, coordinating and controlling the various business activities.
- A budget is a detailed schedule of the proposed combinations of the various factors of production which the management deems to be the most profitable for the ensuring period.
- Budgetary control is a systematic process of planning the best use of resources to achieve a business objective. It is a tool in the hands of planner which reaches through coordination into control and ties the three aspects firmly together.

Notes

Notes

- Budgeting is a disciplined approach to coordinate the planning of all functional executives towards the common profit making goals.
- Budgeting motivates to think ahead by requiring them to formalize their planning efforts.
- Budgeting gives management a means for self-evaluation as it provides goals and objectives against which performance can be evaluated without any difficulty.
- Budget estimates are often wrong as they are based on approximations and personal judgements.
- Budgeting is a continuous process and it requires full attention of the management so that timely action is taken on issues concerning the preparation, maintenance and administration of budgets.
- Budget Centre represents the segment of the organisation for which budget is prepared. According to the Institute of Cost and Works Accountants (UK) budget centre is "a section of the organisation of an undertaking defined for the purpose of budgetary control".
- The fixed budget is, generally, thought of as predetermined costs projected at a particular capacity level.
- Flexible Budget is simply a series of fixed budgets that apply to varying level of production.

10.9. Review Questions

1. What do you mean by a budget? Discuss its objectives.
2. Discuss advantages and limitations of budgeting.
3. Describe essential characteristics of a good budgetary control.
4. Give Classification of budgets.
5. What is Zero-base budgeting? Mention various steps involved in Zero-based budgeting.
6. What do you mean by programme budgeting? Discuss its limitations.
7. Write short notes on:
 - (a) Budget committee
 - (b) Budget manual
 - (c) Performance budgeting
8. The following data are available in a manufacturing company for a yearly period.

Fixed expenses:	(₹) (lakh)
Wages and salaries	9.5
Rent, rates and taxes	6.6
Depreciation	7.4
Sundry administrative expenses	6.5
Semi-variable expenses (at 50% of capacity):	
Maintenance and repairs	3.5

Indirect labour	7.9
Sales department salaries, etc.	3.8
Sundry administrative salaries	2.8
Variable expenses (at 50% of capacity):	
Materials	21.7
Labour	20.4
Other expenses	7.9
	98.0

Notes

Assume that the fixed expenses remain constant for all levels of production: semi-variable expenses remain constant between 45% and 65% of capacity, increasing by 10% between 65% and 80% capacities and by 20% between 80% and 100% capacity.

Sales at various levels are:

	(₹) (lakh)
50% capacity	100
60% capacity	120
75% capacity	150
90% capacity	180
100% capacity	200

Prepare a flexible budget for the year and forecast the profit at 60, 75%, 90% and 100% capacity.

9. Prepare a cash budget of a company for April, May and June 2006 in a columnar form using the following information –

Months 2005	Sales (₹)	Purchases (₹)	Wages (₹)	Expenses (₹)
January (Actual)	80,000	45,000	20,000	5,000
February (Actual)	80,000	40,000	18,000	6,000
March (Actual)	75,000	42,000	22,000	6,000
April (Budgeted)	90,000	50,000	24,000	7,000
May (Budgeted)	85,000	45,000	20,000	6,000
June (Budgeted)	80,000	35,000	18,000	5,000

You are further informed that:

- 10% of the purchases and 20% of the sales are for cash.
- The average collection period of company is 1/2 months and the credit purchases are paid off regularly after one month.
- Wages are paid half-monthly and the rent of ₹ 500 included in expenses is paid monthly.
- Cash and Bank balance as on April 1, was ₹ 15,000, and the company wants to keep it on the end of every month below ₹ 15,000 (but not less than ₹ 14,000), the excess cash being put in Fixed Deposits in multiples of ₹ 1,000.

Neo Concept for Decision-Making

Notes

Structure

- 11.1. Introduction to Activity-Based Management (ABM)
- 11.2. Activity-Based Costing (ABC)
- 11.3. Cost Driver
- 11.4. Introduction to Value Chain Analysis
- 11.5. Introduction to Target Costing
- 11.6. Introduction to Life-Cycle Costing
- 11.7. Summary
- 11.8. Review Questions

11.1. Introduction to Activity-Based Management (ABM)

ABM has grown largely out of the work of the Texas-based Consortium for Advanced Manufacturing-International (CAM-I). The principles and philosophies of activity-based thinking apply equally to service companies, government agencies and industries. Activity-based costing and activity-based management have been around for more than fifteen years. Most forward-thinking companies have implemented them, or are in the process of doing so. ABC is not a method of costing, but a technique for managing the organisation better. It is one-off exercise which measures the cost and performance of activities, resources and the objects which consume them in order to generate more accurate and meaningful information for decision-making. ABM supports business excellence by providing information to facilitate long-term strategic decisions. It allows product designers to understand the impact of different design on cost and flexibility and then to modify their design accordingly.

Characteristics of Activity-Based Management (ABM)

1. ABM is a fundamental shift in emphasis from traditional costing and performance measurement. People undertake activities which consume resources, so controlling activities allow controlling costs at their source.
2. The real value and power of ABM comes from the knowledge and information that leads to better decisions and the leverage it provides to measure improvement.
3. ABM enables management to make informed decisions about lines of business, product-mix, process and product design, capital investments and pricing, etc.
4. ABM will not reduce costs, it will only help you understand costs better to know what to correct.

5. The process of ABM does consume resources, and the manpower costs can be significant.
6. Companies considering or already implementing ABM explains why certain product or market factors might make it potentially beneficial, those same factors might not lead to a successful implementation.
7. ABM gives better chance of establishing a useful costing for outputs.

Notes

Need of ABM

Management practices and methods have changed over the last decade and will continue to change. Organisations are moving from a function orientation to a process orientation. Total quality management (TQM), just-in-time (JIT), benchmarking and business process reengineering (BPR) are all examples of management improvement initiatives. These initiatives are designed to improve an organization's work processes and activities to effectively and efficiently meet or exceed changing customer requirements. Activity-based management fulfils the need of information by providing cost and operating information. The focus of ABM is on accurate information about the true cost of products, services, processes, activities, distribution channels, customer segments, contracts, and projects. Activity-based management makes this cost and operating information useful by providing value analysis, cost drivers, and performance measures to initiate, drive or support improvement efforts and to improve decision-making. Activity-based management requires an understanding of the link between activities that consume resources and the costs associated with those resources. Actually the objective of Activity-Based Costing is to create the cost per unit of measured cost driver whereas the objective of activity-based management is to manage the activities that drive those costs, so firstly we should know what Activity-Based Costing exact is.

11.2. Activity-Based Costing (ABC)

Activity Based Costing is not a distinct method of costing but it is only a new practice or intermediate change in the process attribution of costs of jobs or processes. The ABC is a costing system which focuses on activities performed to produce products. In the context of activity-based costing, the costs are collected according to activities such as material ordering, material handling, quality testing, machine setups, customer support service, etc. and jobs and processes for which cost collection is being attempted are loaded with costs of these activities rationally. This costing system assumes that activities are responsible for the incurrence of costs and products and create the demands for activities. In the traditional product costing system, costs are, first traced not to activities but to an organisational unit, such as plant or department and then to products. Under both ABC and traditional costing systems, the second and final stage consists of tracing costs to the product.

According to CIMA, London, *Activity-Based Costing is cost attribution to cost units on the basis of benefits received from indirect activities, i.e. ordering, setting-up, assuring quality, etc.*

ABC provides a clear picture of how products, brands, customers, facilities, regions and distribution channels generate revenues and consumer resources. ABC

Notes

has promised companies a new way to understand costs and a new way to limit these costs to the products and customers driving them. It has been heralded as the cost accounting model that would help management improve profitability.

And it is fair to say that it does do that if management gains a thorough understanding of its business processes and cost behaviour during the ABC analysis process and Management applies the insights gained during ABC fact gathering and analysis to improve decision-making at both operating and strategic levels.

In the traditional costing system, overheads are charged to products on a production volume-related basis such as direct labour hours, direct labour cost and machine hours. This costing system is based on the assumption that all overheads are related basically to production volume. Traditional costing system has the following characteristics:

1. It assumes simple labour-based production norms and low levels of mechanisation.
2. This system is assumed that cost not to be affected much by technology changes and production methods.
3. Products are subject to slow rate of changes.
4. Direct costs form a longer proportion of the total costs of products.
5. Standardised products are generally assumed to be produced.

Reasons for Introduction of ABC

There are some important reasons for introduction of ABC, such as:

1. Traditional costing fails to capture cause and effect relationship.
2. Traditional costing systems are driven by the need to value stocks rather than to provide meaningful product cost.
3. Market place is very competitive.
4. Traditional costing often fails to highlight interrelationship among activities in different departments.
5. Direct labour has shrunk as a percentage of total cost for majority of manufacturing companies. Still it is most common basis of over-loading overheads to products.
6. Complexity has increased and product ranges are wider.
7. Product cycles are shorter and demand for quality is higher.

Thus by emphasising on activities, ABC tries to ascertain the factors that cause each major activity, the cost of such activities, and the relationship between activities and products produced. The relationship between activities and products has been shown in the following figure:

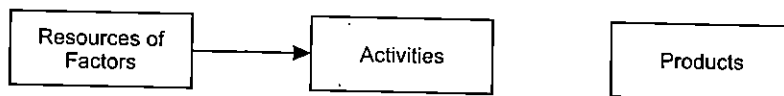


Fig. 11.1.

Steps of ABC Process

*Neo Concept for
Decision-Making*

1. Identify the main activities in the organisation, like material handling, purchasing, dispatch, assembly, etc.
2. Identify the factors, which determine the costs of an activity. These are known as cost drivers like numbers of purchase order, numbers of orders delivered, number of setups, etc.
3. Collect the costs of each activity. These are known as cost pools and are directly equivalent to traditional cost centres.
4. Charge support overheads to products on the basis of their usage of the activity, it is expressed in terms of the chosen cost drivers(s).

Notes

11.3. Cost Driver

Activity cost drivers are specific units of work or activities performed to serve customer needs. The customer may be inside the organisation, like an accounting office that receives maintenance services or outside the organisation, like a client of an advertising firm, or as the performance of activities consumes resources and the performance of activities drives costs. In a manufacturing organisation, the following are examples of some activity cost drivers.

1. number of receiving orders for the receiving department
2. number of labour transactions
3. changes
4. number of parts received per month
5. number of setups hours
6. number of direct labour hours
7. number of units
8. number of setups
9. value of material in a product
10. number of purchasing orders for the cost of operating the purchase department
11. number of dispatch orders for the dispatch department
12. number of schedule number of inspections
13. number of vendors
14. number of units scrapped
15. number of employees.

Selection of Cost Drivers

In traditional product costing, the numbers of cost drivers used are few—like direct labour cost, direct labour hours, machine hours, and units produced, but ABC may use a multitude of cost drivers that relate costs more closely to the resources consumed and activities occurring. There are many difficulties in choosing realistic cost drivers.

There are no simple rules that pertain to the selection of cost drivers. The best approach is to identify the resources that constitute a significant proportion of the product cost and determine their cost behaviour. If several are long-term variable costs, a transaction-based cost system should be considered.

Notes

Examples of transaction-based cost drivers are as follows:

Support department costs (i.e. cost pools)	Possible cost driver
Production scheduling	number of production runs
Setup costs	number of production runs
Material handling	number of production runs
Finished goods stock handling and dispatch cost	number of orders delivered
Purchasing costs	number of purchase order
Raw material stock handling	number of order received
Machine insertion number of parts	number of Machine inserted parts
Quality testing	hours of test time

In traditional costing systems, most support overheads are assigned to products in a general arbitrary manner and therefore cannot be related to products. ABC focuses on the drivers which cause overheads and traces overheads to products in terms of usage of cost drivers. Therefore, under ABC a large proportion of overheads are product related. ABC by identifying appropriate cost drivers and cost pools makes the product for customer accurate and reliable. Further, ABC in this way helps in better cost management and cost control by managing the activities which cause costs.

Classification of Activities

- 1. Unit Level Activities:** Unit level activities are those activities which are performed each time a unit is produced. They are repetitive activities. For example, direct labour hours, machine hours, power, cost of raw materials, cost of inserting a component, utilities cost of operating equipment, some costs of packing and sales commission are used each time a unit is produced or sold. Direct material and direct labour activities are also unit-level activities, although they are not overhead costs. Costs of unit level activities vary with the number of units produced.
- 2. Batch Level Activities:** Batch level activities are those activities which are performed each time a batch of goods or products is produced. The costs of batch level activities vary with the number of batches but are fixed with respect of the number of units in each batch. Machine setups, inspections, production scheduling and materials handling, cost of processing sales order, cost of issuing and racking work order, cost of equipment setup, cost of moving batch between workstations are examples of batch level activities which are related to batches but not to individual products.
- 3. Product Level Activities:** Product Level activities are those activities which are performed to support the production of each different type of product. Maintenance of equipment, engineering charges, testing routines,

maintaining bills of materials and handling materials, cost of product development, cost of product marketing such as advertising, cost of specialised equipment and cost of maintaining specialised equipment are some examples of batch-level activities.

4. **Facility Level Activities:** Facility level activities are those which are needed to sustain a factory's general manufacturing process. These activities are common to a variety of products and are most difficult to link to product specific activities. Examples of facility level activities are factory management, maintenance, security and plant depreciation, cost of maintaining non-specialised equipment, cost of real property taxes, cost of general advertising and cost of general administration such as the plant manager's salary.

In the ABC system, facility level activities and costs are treated as period costs as they are difficult to assign to different products. The costs associated with the first three categories—unit level, batch level, product level are assigned to products, using costs drivers that reflect the cause and effect relationship between activity consumption and cost.

ABC and Traditional Costing

In Traditional Costing System, overhead costs are assumed to be influenced only by units produced and in this system, batch level, product level and facility level activities are fixed a cost which do not vary as production volume changes. In ABC, variable overhead is appropriately traced to individual products. The costs incurred in the units produced have been traditionally treated as variable overheads. But when fixed overheads are apportioned on the basis of units made, as in traditional costing, such apportionment is likely to be arbitrary and also may not reflect activities and cost actually consumed by the products.

ABC improves the product costing procedure as compared to traditional costing. Under ABC, two level activities batch level and product level are assumed to influence fixed overhead costs and batch level and product level thus are accepted as non-unit based cost drivers. By establishing the link between these cost drives and fixed overhead costs, they are finally traced to individual products.

The difference between ABC and traditional costing system may be summarised as follows:

1. Both the costing systems follow a two stage allocation procedure.
2. In ABC in the first stage overhead costs are assigned to each major activity and not to departments and many activity-based costs pools or cost centres are created whereas in traditional costing, overheads are collected department wise.
3. In traditional costing, overhead cost of service department are allocated to production departments and therefore in this costing system finally only fewer cost pools exist but ABC creates separate cost pools for service activities as well and overhead costs of these service activities are assigned directly to specific products through applying cost driver rates, thus in ABC there is no need to allocate/reapportion overheads of service departments.

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Advantages of Activity-Based Costing

1. It helps understanding the behaviour of overhead costs and their relationship to products, services, customers and market segment.
2. It provides the right information for performance measurement because it focuses on activities rather than resources.
3. It provides accurate information on profit margin and performance measurement for profit improvement.
4. It helps to allocate the resources to those activities that will increase shareholders value.
5. It gives businesses an opportunity to improve their competitive position through better information it links profitability analysis to operational decisions.
6. It ensures that the cost of non-value added activities is visible to management.
7. The understanding of the cost driver for each activity gives better control over the factors, which cause costs.

Disadvantage of ABC

1. It is essentially not the panacea for all ills.
2. It can be difficult to find out what costs apply in a particular activity.
3. Some areas of activity overlap and are difficult to separate.
4. ABC is a costly exercise that it absorbs a lot of resources.
5. Too much emphasis on customer viability can lead to problems such as cheaper products and; therefore, potentially lower sales.
6. It may lead to weaker customer segmentation.
7. It takes no account of opportunity cost.

Illustration 1: Richa manufactures four products, namely A, B, C, and D, using the same plant and process. The following information relates to a production period:

Product	Volume	Material cost per Unit (₹)	Direct labour per Unit	Machine time per Unit	Labour cost per Unit (₹)
W	500	5	$\frac{1}{2}$ hour	$\frac{1}{4}$ hour	3
X	5000	5	$\frac{1}{2}$ hour	$\frac{1}{4}$ hour	3
Y	000	16	2 hours	1 hour	12
Z	7000	17	$1\frac{1}{2}$ hours	$1\frac{1}{2}$ hours	9

Total production overhead recorded by the cost accounting system is analysed under the following headings:

Factory overhead applicable to machine-oriented activity is = ₹ 37,424

Setup costs are = ₹ 4,355

The cost of ordering materials = ₹ 1,920

Handling materials = ₹ 7,580

Administration for spare parts = ₹ 8,600

These overhead costs are absorbed by products on a machine hour rate of ₹ 4.80 per hour, giving an overhead cost per product of:

W = ₹ 1,20 X = ₹ 1,20 Y = ₹ 4,80 Z = ₹ 7,20

However, investigation into the production overhead activities for the period reveals the following totals:

Product	Number of Setups	Number of Material Orders	Number of Times Material was handled	Number of spare Parts
W	1	1	2	2
X	6	4	10	5
Y	2	1	3	1
Z	8	4	12	4

Your are required:*

- to compute an overhead cost per product using activity-based costing, tracing overheads to production units by means of cost drivers.
- to comment briefly on the difference disclosed between overheads traced by the present system and those traced by activity-based costing.

Solution:

(ii) **Machine-related costs**

Machine hours for the period:

$$W = 500 \times \frac{1}{4} = 125$$

$$X = 5,000 \times \frac{1}{4} = 1,250$$

$$Y = 600 \times 1 = 600$$

$$Z = 7,000 \times \frac{1}{4} = 10,500$$

$$\underline{12,475}$$

Machine hour rate = ₹ 3 per hour (₹ 37,424 ÷ 12,475 hrs)

Setup related costs

Cost per setup = ₹ 256.18 (₹ 4355 ÷ 17)

Setup cost per unit of output:

$$\text{Product W } (1 \times ₹ 256.18) \div 500 = ₹ 0.51$$

$$X (6 \times ₹ 256.18) \div 5000 = ₹ 0.31$$

$$Y (2 \times ₹ 256.18) \div 600 = ₹ 0.85$$

$$Z (8 \times ₹ 256.18) \div 7000 = ₹ 0.29$$

Notes

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Material ordering related costs

Cost per order = ₹ 1920 ÷ 10 orders = ₹ 192 per order

Material ordering cost per unit of output:

Product W (1 × ₹ 192) ÷ 500 = ₹ 0.38

X (4 × ₹ 192) ÷ 5000 = ₹ 0.15

Y (1 × ₹ 192) ÷ 600 = ₹ 0.32

Z (4 × ₹ 192) ÷ 7000 = ₹ 0.11

Material handling related costs

Cost per material handling = ₹ 7,580 ÷ 27 = ₹ 280.74

Material handling cost per unit of output:

Product W (2 × ₹ 280.74) ÷ 500 = ₹ 1.12

X (10 × ₹ 280.74) ÷ 5000 = ₹ 0.56

Y (3 × ₹ 280.74) ÷ 600 = ₹ 1.40

Z (12 × ₹ 280.74) ÷ 7000 = ₹ 0.48

Spare parts

Cost per part = ₹ 8,600 ÷ 12 = ₹ 716.67

Administration of spare parts cost per unit of output:

Product W (2 × ₹ 716.67) ÷ 500 = ₹ 2.87

X (5 × ₹ 716.67) ÷ 5000 = ₹ 0.72

Y (1 × ₹ 716.67) ÷ 600 = ₹ 1.19

Z (1 × ₹ 716.67) ÷ 7000 = ₹ 0.41

Overhead cost per unit of output

Product

	W (₹)	X (₹)	Y (₹)	Z (₹)
ABC overhead cost:				
Machine overheads	0.75	0.75	3.00	4.50
Setups	0.51	0.31	0.85	0.29
Material ordering	0.38	0.15	0.32	0.11
Material handling	1.12	0.56	1.40	0.48
Spare parts	2.87	0.72	1.19	0.41
	5.63	2.49	6.76	5.79
Present system	1.20	1.20	4.80	7.20
Difference	+ 4.43	+ 1.29	+ 1.96	- 1.41

The ABC system traces costs to products based on the quantity (Cost Drivers) of activities consumed. Product Z is the high volume product and thus, the present volume based system traces a large share of overheads to this product. In contrast, the ABC system recognises that the product Z consumes overheads to this product, according to activity consumption and traces a lower amount of as result, product Z is overcosted and remaining products are undercosted.

Illustration 2: A company produces the following information

Neo Concept for
Decision-Making

Particulars	Products			
	X	Y	Z	Total
Production and sales (units)	60,000	40,000	16,000	
Raw material usage in units	10	10	22	
Raw material costs	₹ 50	40	22	24,76,000
Direct labour hours	2.5	4	2	3,42,000
Machine hours	2.5	2	4	2,94,000
Direct labour costs	₹ 16	24	12	
No. of production runs	6	14	40	60
No. of deliveries	18	6	40	64
No. of receipts	60	140	880	1,080
No. of production orders	30	20	50	1,00

Notes

Overheads are as follows:

(₹)

Setup	60,000
Machines	15,20,000
Receiving	8,70,000
Packing	5,00,000
Engineering	7,46,000

The company operates Just-in-Time inventory policy and receives each component once per production run.

Required:

- Compute the product cost-based on direct labour-hour recovery rate of overheads.
- Compute the product costs using activity based costing.

Solution:

Calculate to the total overheads:

(₹)

Setup	60,000
Machines	15,20,000
Receiving	8,70,000
Packing	5,00,000
Engineering	7,46,000
Total overheads	36,96,000

Total direct labour hours = 3,42,000

(i) Direct labour hour recovery rate of overheads

$$\frac{\text{Total overheads}}{\text{Total direct labour hours}} = \frac{\text{₹ } 36,96,000}{3,42,000} = \text{₹ } 10.811 \text{ per DLH}$$

Computation of product cost-based on Direct Labour

Hour Recovery Rate

(₹)

Notes

Particular	Products		
	x	y	z
Direct materials	50.00	40.00	22.00
Direct wages	16.00	24.00	12.00
Overheads			
(2.5 hrs × ₹ 10.81)	27.03	—	—
(4 hrs × ₹ 10.81)	—	43.24	—
(2 hrs × ₹ 10.81)	—	—	21.62
Total Cost	93.03	107.24	55.62

(ii) Computation of product cost using Activity Based Costing

$$1. \text{ Setup Cost} = \frac{\text{Setup cost}}{\text{No. of production runs}} = \frac{60,000}{60} = ₹ 1000 \text{ per setup}$$

$$2. \text{ Receiving} = \frac{\text{Receiving cost}}{\text{No. of orders}} = \frac{8,70,000}{1,080} = ₹ 805.55 \text{ per order}$$

$$3. \text{ Packing} = \frac{\text{Packing cost}}{\text{No. of orders delivered}} = \frac{5,00,000}{64} = ₹ 7812.50 \text{ per order}$$

$$4. \text{ Engineering} = \frac{\text{Engineering cost}}{\text{No. of product orders}} = \frac{7,46,000}{100} = ₹ 7460 \text{ per order}$$

$$5. \text{ Machine hours rate} = \frac{\text{Machine overheads}}{\text{Machine hours}} = \frac{15,20,000}{2,94,000} = ₹ 5.17 \text{ per M.H.}$$

(a) Setup Cost per unit

$$\frac{\text{No. of products runs} \times \text{Cost per setup}}{\text{No. of units}}$$

$$X = \frac{6 \times 1,000}{60,000} = ₹ 0.10$$

$$Y = \frac{14 \times 1,000}{40,000} = ₹ 0.35$$

$$Z = \frac{40 \times 100}{16,000} = ₹ 2.50$$

(b) Machine Overheads per unit

$$\text{No. of machine hours} \times \text{Overhead per machine hour}$$

$$X = 2.5 \times 5.17 = ₹ 12.93$$

$$Y = 2 \times 5.17 = ₹ 10.34$$

$$Z = 4 \times 5.17 = ₹ 20.68$$

(c) Receiving Cost per unit

$$\frac{\text{No. of receipts} \times \text{Receiving cost per order}}{\text{No. of units}}$$

$$X = \frac{60 \times 805.55}{60,000} = ₹ 0.81$$

$$Y = \frac{140 \times 805.55}{40,000} = ₹ 2.82$$

$$X = \frac{880 \times 805.55}{16,000} = ₹ 44.30$$

(d) Packing cost per unit

$$\frac{\text{No. of deliveries} \times \text{Packing cost per order}}{\text{No. of units}}$$

$$X = \frac{18 \times 7812.50}{60,000} = ₹ 2.34$$

$$Y = \frac{6 \times 7812.50}{40,000} = ₹ 1.17$$

$$Z = \frac{40 \times 7812.50}{16,000} = ₹ 19.53$$

(e) Engineering cost per unit

$$\frac{\text{No. of production order} \times \text{Engineering cost per order}}{\text{No. of units}}$$

$$X = \frac{30 \times 7460}{60,000} = ₹ 3.73$$

$$Y = \frac{20 \times 7460}{40,000} = ₹ 3.73$$

$$Z = \frac{50 \times 7460}{16,000} = ₹ 23.31$$

Notes

Computation of product cost-based on Activity-Based Costing (₹)

Particular	Products		
	x	y	z
Direct materials	50.00	40.00	22.00
Direct wages	16.00	24.00	12.00
Prime cost (i)	66.00	64.00	34.00
Overheads			
Machines	12.93	10.34	20.68
Setup	0.10	0.35	2.50
Receiving	0.81	2.82	44.30
Packing	2.34	1.17	19.53
Engineering	3.73	3.73	23.31
Total (ii)	19.91	18.41	110.32
Total Cost (i) + (ii)	85.91	82.41	144.32

Notes

11.4. Introduction to Value Chain Analysis

The value chain approach was developed by **Michael Porter** in the 1980s in his book "*Competitive Advantage: Creating and Sustaining Superior Performance*". The concept of value added, in the form of the value chain, can be utilised to develop an organisation's sustainable competitive advantage in the business arena of the 21st Century. All organisations consist of activities that link together to develop the value of the business, and together these activities form the organization's value chain. Such activities may include purchasing activities, manufacturing the products, distribution and marketing of the company's products. The value chain framework has been used as a powerful analysis tool for the strategic planning of an organisation. The aim of the value chain framework is to maximise value creation while minimising costs.

The Concept of Value

The value of a product will be interpreted in different ways by different customers. Its common characteristic is a high level of performance, capability, emotional appeal, style, etc. relative to its cost. This can also be expressed as maximising the function of a product relative to its cost:

$$\text{Value} = (\text{Performance} + \text{Capability}) / \text{Cost} = \text{Function} / \text{Cost}$$

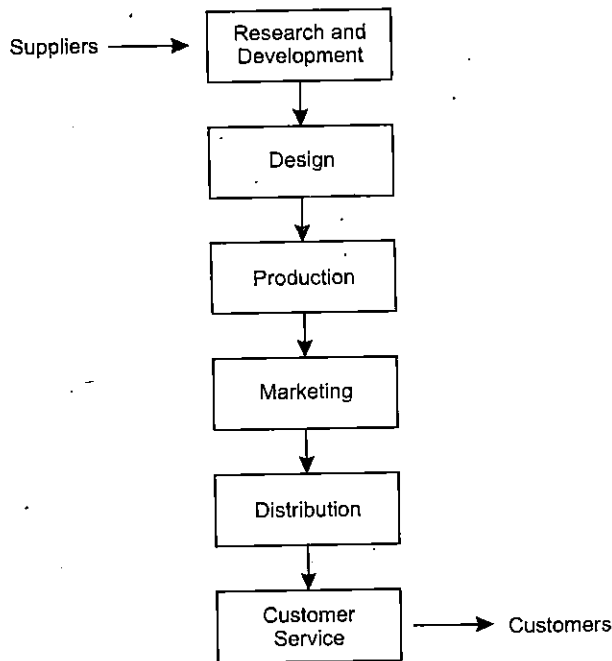
Value is not a matter of minimizing cost. In some cases the value of a product can be increased by increasing its function, i.e. performance or capability and cost as long as the added function increases more than its added cost. The concept of functional worth can be important.

Concept of Value Chain Analysis

Lawrence Miles conceived of Value Analysis (VA) in the 1940s based on the application of function analysis to the component parts of a product. Component cost reduction was an effective and popular way to improve "value" when direct labour and material cost determined the success of a product. The value analysis technique supported cost reduction activities by relating the cost of components to their function contributions. Value chain is defined as the set of activities and resources necessary to create and deliver the product or service valued by customers. Its basic components include research and development, production and supplier relations, marketing and distribution, and customer service activities.

Value chain, known as supply chain also, is a linked set of processes or activities that are undertaken to convert inputs into products and services for the firm's customers. Value chain analysis helps in determining which activities add value to products or services for the customers. Those activities which do not create customer value within the value chains should be eliminated. Thus, a business firm can become more efficient productive and also a value creator. Value chain analysis motivates employees to contribute effectively to the firm's activities, and the more

they contribute, the greater compensation they earn. Value chain analysis includes the following activities:



Notes

Fig. 11.2.

Value chain analysis is a powerful tool for managers to identify the key activities within the firm which form the value chain for that organisation, and have the potential of a sustainable competitive advantage for a company. According to Porter, **value chain framework** is an interdependent system or network of activities, connected by linkages.

The value chain analysis essentially entails the linkage of two areas.

1. The value chain links the value of the organisation activities with its main functional parts.
2. The assessment of the contribution of each part in the overall added value of the business is made.

In order to conduct the value chain analysis, the company is split into primary and support activities. Primary activities are those that are related with production, while support activities are those that provide the background necessary for the effectiveness and efficiency of the firm.

From a strategic cost management perspective, value chain analysis has three key characteristic attributes are:

1. A clear identification of the strategy chosen by the organisation,
2. Its emphasis on sources of sustainable competitive advantage, and
3. Its focus on the importance of complex linkages and interrelationships.

These attribute emphasises the need to manage costs of activities and processes in the context of the strategy selected by the organisation. There should be a strong link between the value chain activities and the organisation's strategy. Thus, value chain analysis requires an organisation to determine activities that are denoted as

Notes

strategic value chain activities. These are activities that give the organisation the potential to create value for the consumer as a way of creating and sustaining competitive advantage. The process of determining strategic value chain activities is based on the 'pull' approach, which first identifies product characteristics that are valued by the consumers.

Once strategic activities have been identified, the remaining activities must also be clearly identified and denoted as non-strategic. While such activities are important for the overall provision of products and services, they do not confer competitive advantage to the organisation. All non-strategic value chain activities should be streamlined, reduced or out sourced so as to make sure that the organisation's efforts are geared towards activities that have the greatest impact on its ability to achieve and sustain competitive advantage.

Limitations of Value Chain Analysis

1. One of the limitations of the value chain model is that it describes an industrial organisation which essentially buys raw materials and transforms these into physical products. At the time when the model was introduced, service industries in the western countries employed lesser workforce compared to today's statistics of the same. Academics and practitioners alike have critiqued the model and its applicability in the context of service organisations. Partnerships, alliances and collaboration along with differentiation and low cost are common drivers of value today.
2. The real value of the product is assessed when the product reaches the final customer, and any assessment of that value before that moment is only something that is true in theory.
3. Despite this limitation, analysts can effectively use the value chain model to determine the value to the final customers in a theoretical way.

11.5. Introduction to Target Costing

As an industry develops and becomes mature, the basis of competition typically moves to price, profit margins shrink and companies begin focusing on cost reduction. However, the cost structure for existing products is largely locked in and cost reduction activities have limited impact. Now companies begin to realise that the majority of a product's costs are committed based on decisions made during the development of a product the focus shifts to actions that can be taken during the product development phase.

Target Costing is a systematic approach to establishing product cost goals based on market-driven standards. It is a strategic management process for reducing costs at the early stages of product planning and design.

Target costing is based on three premises as follows:

- (i) Orienting products to customer affordability or market-driven pricing,
- (ii) Treating product cost as an independent variable during the definition of a product's requirements, and
- (iii) Proactively working to achieve target cost during product and process development.

Target costing begins with identifying customer needs and calculating an acceptable target sales price for the product. Working backward from the sales price, companies establish an acceptable target profit and calculate the target cost as follows:

$$\text{Target Cost} = \text{Target Price} - \text{Target Profit}$$

Target costing is different from standard costing. While target costs are determined by market driven standards (target sales price – target profit = target cost). Standard costs are determined by design-driven standards with less emphasis on what the market will pay (engineered costs + desired markup = desired sales price).

Target costing is not a product costing system but is a management tool to determine or set a product's cost. Target costing is a common practice in Japan where markets are extremely competitive. The market determines the price of products and there is little opportunity for the individual organisations to set prices. Therefore, controlling cost is extremely important.

Steps in Target Costing

The following are the steps in target costing system:

1. Set target selling price of the product based on customers demand, sales forecast, competitive conditions, and availability of homogeneous products in the market.
2. Determine the target profit margin based on the company's profit objectives and projected sales relating to the product.
3. Determine target cost after deducting target profit margin from target selling price.

Advantages of Target Costing

1. Target costing system is an integral part of the overall management process and is not merely a measure to control and or reduce cost.
2. It helps management in preparing schedule of projected production volumes based on the relationship between price and volume.
3. It helps in coordinating different management activities like production, sales, distribution, purchase and also helps in planning, decision-making and controlling.
4. It facilitates cost reduction programmes in a firm as current costs of the firm are oriented and driven towards target cost. The difference between a firm's current cost and target cost indicates the grey area for management attention to reduce cost.
5. Target costing is allied with the objective of continuous profit improvement.
6. The profitability of the firm is improved since product's cost is always attempted to be within the target cost.
7. Management can take cost reduction steps to minimise cost, since setting the selling price is a prerequisite in target costing, pricing policy is known in advance and management can identify profitable products.

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8. Target costing does not only target cost, but it target selling price also.

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11.6. Introduction to Life-cycle Costing

Lifecycle Costing (LCC) also known as Whole Life Costing is a technique to establish the total cost of ownership. It is a structured approach that addresses all the elements of this cost and can be used to produce a spend profile of the product or service over its anticipated life-span.

Benefits of LCC

There are four major benefits of LCC analysis:

- (i) Evaluation of competing options in purchasing;
- (ii) Improved awareness of total costs;
- (iii) More accurate forecasting of cost profiles; and
- (iv) Performance trade-off against cost.

The cost of ownership of an asset or service is incurred throughout its whole life and does not all occur at the point of acquisition. In life-cycle costing, following costs must be taken into account at the planning stage:

- (i) Acquisition costs are those incurred between the decision to proceed with the procurement and the entry of the goods or services to operational use.
- (ii) Operational costs are those incurred during the operational life of the asset or service.
- (iii) End life costs are those associated with the disposal, termination or replacement of the asset or service. In the case of assets, disposal cost can be negative because the asset has a resale value.

Definitions of LCC

CAM-I defines life-cycle costing as the accumulation of costs for activities that occur over the entire life-cycle of a product, from inception to abandonment by the manufacturer and the customer. Life-cycle analysis provides a framework for managing the cost and performance of a product over the duration of its whole life. The life-cycle commences with the initial identification of a consumer need and extends through planning, research, design, development, production, evaluation, use, retirement, and disposal.

Cost systems have focused primarily on the cost of physical production, without accumulating costs over the entire design, manufacture, market, and support cycle of a product. Life-cycle costing and reporting provide management with a better picture of product profitability and help managers to gauge their planning activities.

Product Life-cycle Costing

The cycle begins with the identification of new consumer need and the invention of a new product and is often followed by patent protection and further development to make it saleable. Then competitors enter the field with rival products and the distinctiveness of the new product starts diminishing. The speed of degeneration differs from product to product. The innovation of a new product and its degeneration into a common product is termed as the 'life-cycle of a product'.

Characteristics of LCC

The major characteristics of product life-cycle concept are as follows:

1. The products have finite lives and pass through the cycle of development, introduction, growth, maturity, decline and deletion at varying speeds.
2. Product cost, revenue and profit patterns tend to follow predictable courses through the product life-cycle.
3. Profit per unit varies as products move through their life-cycles.
4. Each phase of the product life-cycle poses different threat and opportunities that give rise to different strategic actions.
5. The revenue and costs associated with a product for different phases or calendar years are determined.
6. This costing helps in identifying different components of products cost such as market research product design, product development, manufacturing, selling and distribution, customer relation and so on.
7. It improves management decisions in respect of a product as revenues and costs are more accurately forecasted.
8. It aids in improving long-term strategies, planning, product quality and customer focus.

Notes

Phase in Product Life-cycle

There are five distinct phases in the life-cycle of a product as shown below:

1. **Introduction Phase:** This is owing to high unit costs resulting from low output rates, and heavy promotional investment incurred to stimulate growth. The introductory stage may last from a few months to a year for consumer goods and generally longer for industrial products.
2. **Growth Phase:** In the growth phase product penetration into the market and sales will increase because of the cumulative effects of introductory promotion and distribution. Since costs will be lower than in the earlier phase, the product will start to make profit contribution. Profit margins peak during this stage as experience curve effects lower unit costs and promotion costs are spread over a larger volume.
3. **Maturity Phase:** This stage begins after sales cease to rise exponentially. This is usually the longest stage in the cycle, and most existing products are in this stage. The period over which sales are maintained depends upon the firm's ability to stretch the cycle by means of market segmentation and finding new uses for it. The increasing number of competitive products. In this phase, there will be stable prices and profits and the emergence of competitors. There is no improvement in the product but changes in selling effort are common. Profit margin slip despite rising sales.
4. **Saturation Phase:** As the market becomes saturated, pressure is exerted for a new product and sales among with profit begin to fall Intensified marketing effort may prolong the period of maturity, but only by increasing costs disproportionately.
5. **Decline Phase:** Eventually most products and brands enter a period

Notes

of declining sales. This may be caused by many factors like technical advances leading to product substitution, fashion and changing tastes, the average length of the product life-cycle is tending to shorten as a result of economic, technological and social change.

Sigma Engineering Company is considering to replace or repair a particular machine, which has just broken down. Last year this machine costed ₹ 20,000 to run and maintain. These costs have been increasing in real terms in recent years with the age of the machine. A further useful life of 5 years is expected, if immediate repairs of ₹ 19,000 are earned out. If the machine is not repaired it can be sold immediately to realise about ₹ 5,000 (Ignore loss/gain on such disposal).

Alternatively, the company can buy a new machine for ₹ 49,000 with an expected life of 10 years with no salvage value after providing depreciation on straight line basis. In this case, running and maintenance costs will reduce to ₹ 14,000 each year and are not expected to increase much in real terms for a few years at least. S Engineering Company regards a normal return of 10% p.a. after tax as a minimum requirement on any new investment. Considering capital budgeting techniques, which alternative will you choose? Take a corporate tax rate of 50% and assume that depreciation on straight line basis will be accepted for tax purposes also. Given cumulative present value of ₹ 1 p.a. at 10% for 5 years ₹ 3.791, 10 years ₹ 6.145.

Solution:

Evaluation of Alternative Proposals

Alternative I: Repairs to existing machine:

(₹)

Cost of Repairs	$19,000 \div 50 \div 100 = ₹ 9,500$	
Equivalent annual cost for 5 years	$(9,500 \div 3.791)$	2,506
Add: Running and maintenance cost p.a. net of tax	$(20,000 \div 50 \div 100)$	10,000
Present value of casts outflows p.a.		12,506

Alternative II: Replace the old machine:

(₹)

Purchase cost of new machine		49,000
Less: Sale proceeds of old machine		5,000
Net cash outflow		44,000
Equivalent annual cost for 10 years	$(44,000 \div 6.145)$	7,160
Add: Running and maintenance cost p.a. net of tax	$(14,000 \times 50 \div 100)$	7,000
		14,160
Less: Tax saving on depreciation	$(49,000 \div 10) \times 50 \div 100$	2,450
Present value of cash outflow p.a.		11,710

Analysis: From the above analysis it is observed that Alternative II, i.e.

replacement of old machine with a new machine is more profitable, since the cash outflow p.a. will decrease by ₹ 796 (i.e., ₹ 12,506 – ₹ 11,710) if the old machine is replaced with a new machine.

XYZ Company has to replace one of its machines which has become unserviceable. Two options are available:

- (i) A more expensive machine (MEM) with 12 years of life;
- (ii) A less expensive machine (LEM) with 6 years of life.

If machine LEM is chosen, it will be replaced at the end of 6 years by another LEM machine. The pattern of maintenance, running costs and prices are as under:

Particulars	MEM	LEM
Purchasing price (₹)	10,00,000	7,00,000
Scrap value of the end of life (₹)	1,50,000	1,50,000
Overhauling is due at the end of	8th year	4th year
Overhauling costs (₹)	2,00,000	1,00,000
Annual repairs (₹)	1,00,000	1,40,000

Cost of capital—14%

You are required to recommend, which of the machines should be purchased.

End of 4th year	0.5921
End of 6th year	0.4556
End of 8th year	0.3506
End of 12th year	0.2076
Years 1 to 6	3.8890
Years 1 to 12	5.6600

Solution:

Machine MEM 12 year life

Particulars	Year	Cost (₹)	Disc. Factor	Present Value (₹)
Purchase price	0	10,00,000	1.0000	10,00,000
Overhauling	8	2,00,000	0.3506	70,120
Annual repairs	1 – 12	1,00,000	5.6600	5,66,000
Scrap value	12	1,50,000	0.2076	(31,340)
Total NPV of outflow				16,04,960

Machine LEM 6 year life

Particulars	Year	Cost (₹)	Disc. Factor	Present Value (₹)
Purchase price	0	7,00,000	1.0000	7,00,000
Overhauling	4	1,00,000	0.5921	59,210
Annual repairs	6	1,40,000	3.8890	5,44,460

Notes

Scrap value	6	1,50,000	0.4556	68,340
Total NPV of outflow				12,35,330

Notes

Annualised value

MEM $16,04,980 \div 5.600 = ₹ 2,83,565$

LEM $12,35,330 \div 3.889 = ₹ 3,17,647$

Hence, MEM is recommended.

Project Life-cycle Costing

The term 'life-cycle cost' has been defined as it includes the costs associated with acquiring, using, caring for and disposing of physical assets. It included the feasibility studies, research, design, development, production, maintenance, replacement and disposal, as well as support, training and operating costs generated by the acquisition, use, maintenance and replacement of permanent physical assets.

Project Life-cycle Costs

Product life-cycle costs are incurred for products and services from their design stage through development to market launch, production and sales, and their eventual withdrawal from the market. In contract project life-cycle costs are incurred for fixed assets, *i.e.* for capital equipment and so on. The component elements of a project's cost over its life-cycle could include the following:

1. Acquisition cost, *i.e.* costs of research, design, testing, production, construction, or purchase of capital equipment.
2. Transportation and handling costs of capital equipment.
3. Maintenance costs of capital equipment.
4. Operations cost, *i.e.* the costs incurred in operations, such as energy costs, and various facility and other utility costs.
5. Training costs, *i.e.* operator and maintenance training.
6. Inventory costs, *i.e.* cost of holding spare parts, warehousing, etc.
7. Technical data costs, *i.e.* costs of purchasing any technical data.
8. Retirement and disposal costs at the end of life or the capital.
9. Equipment life.

Uses of Project Life-cycle Costing

The project life-cycle costing is especially useful in the following:

1. Projects operate in capital intensive industries.
2. Projects have a sizeable, on-going constructing programme.
3. Projects dependent on expensive or numerous items of plant with consequent substantial replacement programmes.
4. Projects considering major expansion.
5. Projects contemplating the purchase/design/development of expensive new technology.

11.7. Summary

- ABM has grown largely out of the work of the Texas-based Consortium for Advanced Manufacturing-International (CAM-I). The principles and philosophies of activity-based thinking apply equally to service companies, government agencies and industries.
- Management practices and methods have changed over the last decade and will continue to change. Organisations are moving from a function orientation to a process orientation. Total quality management (TQM), just-in-time (JIT), benchmarking and business process reengineering (BPR) are all examples of management improvement initiatives.
- Activity-Based Costing is not a distinct method of costing but it is only a new practice or intermediate change in the process attribution of costs of jobs or processes.

*Neo Concept for
Decision-Making*

Notes

11.8. Review Questions

1. What is activity-based management? Discuss its characteristics.
2. What are the reasons for the introduction of activity-based costing.
3. Discuss advantages and disadvantages of activity-based costing.
4. Write down the limitations of value chain analysis.
5. What do you mean by target costing? Write the steps involved in target costing system.
6. Write down the various advantages of target costing.
7. Discuss the various benefits of life-cycle costing.
8. Write down various phases in the life-cycle of a product.
9. Define project life-cycle costing and write its uses.
10. Write short notes on
 - (a) Activity-based costing
 - (b) Cost drivers
 - (c) Value Chain Analysis
11. The following budgeted information relates to Max PLC for the forthcoming period:

	Products		
	P (000)	Q (000)	R (000)
Sales and production (units)	50	40	30
Selling price (per unit) (₹)	45	95	73
Prime cost (per unit) (₹)	32	84	65
	Hours	Hours	Hours
Machine department (machine hours per unit)	2	5	4
Assembly department (direct labour hours per unit)	7	3	2

Overheads allocated and apportioned to production departments (including service cost centre costs) were to be recovered in product costs

Notes

as follows:

Machine department at ₹ 1.20 per machine hour

Assembly department at ₹ 0.825 per direct labour hour

You ascertain that the above overheads could be re-analysed into 'cost pools' as follows:

Cost pools	₹ 000	Cost drive	Quantity for the period
Machining services	357	Machine hours	4,20,000
Assembly services	318	Direct labour hours	5,30,000
Setup costs	26	Setups	520
Order processing	156	Customer orders	32,000
Purchasing	84	Suppliers' orders	11,200
	941		

You have also been provided with the following estimates for the period:

	Products		
	P	Q	R
Number of setup	120	200	200
Customer orders	8,000	8,000	16,000
Suppliers'	3,000	4,000	4,200

Prepare and present profit statements using:

- (i) conventional absorption costing;
- (ii) activity-based costing.

12. A company produces four products A, B, C and D. The data relating to production activity are as under:

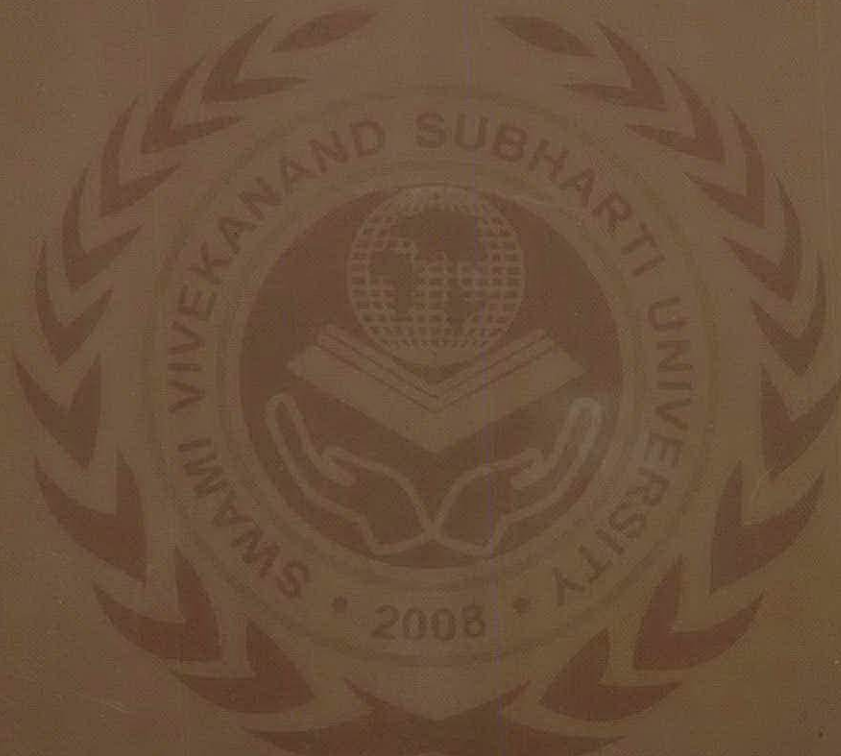
Product	Quantity of Production	Material Cost/Unit (₹)	Direct Labour Hours/Unit	Machine Hours/Unit	Direct Labour Cost/Unit (₹)
A	1,000	10	1	0.50	6
B	10,000	10	1	0.50	6
C	1,200	32	4	2.00	4
D	14,000	34	3	3.00	18

Production overheads are as under:

- (i) Overheads applicable to machine oriented activity : ₹ 1,49,700
- (ii) Overheads relating to ordering materials : ₹ 7,680
- (iii) Setup costs : ₹ 17,400
- (iv) Administration overheads for spare parts : ₹ 34,380
- (v) Material handling costs : ₹ 30,294

MBA-103

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