Tools for Financial Analyses 3

This Module Includes

Tools for Financial Analyses

SLOB Mapped against the Module:

To acquire application-oriented knowledge of various tools for financial analysis in order to assist the management in planning and decision making.

Module Learning Objectives:

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

- Understand the basic concept of comparative, common-size financial statements and trend analysis;
- Compute, interpret and analyse the comparative, common-size financial statements and trend analysis;
- Discuss the basic concept, types, advantages and disadvantages of financial ratio analysis;
- Compute, interpret and analyse different financial ratio analysis;
- Equip themselves with detail understanding of the different models to predict financial distress like Altman's Z Score, Beneish M Score, Piotroski F Score;
- Compute, interpret and analyse the Financial Scores based on Altman's Z Score, Beneish M Score, Piotroski F Score;
- Discuss the conceptual framework including definition, significance and limitations of fund flow statement;
- Prepare and analyse different problems on fund flow statement;
- Know the conceptual framework of cash flow statement;
- Prepare and analyse different problems on cash flow statement;
- Discuss the differences between fund flow statement and cash flow statement.

Introduction

3

A financial statement is a numerical report covering financial information to express the financial results and financial condition of the concern. According to AICPA (American Institute of Certified Public Accountants), financial statements reflect a combination of recorded facts, accounting principles and personal judgements.

Financial statements are prepared for presenting a periodical review or report on the progress by the management and deal with

(i) the status of investments in the business and

(ii) the results achieved during the period under review.

The financial analysis of an enterprise is usually undertaken so that investors, creditors, and other stakeholders can make decisions about those companies. It may be used internally to evaluate issues like employee performance, operating efficiency, credit policies and exterrnally important to evaluate potential investments and credit-worthiness of borrowers, among other things.

An analyst draws the financial data needed in financial analysis from many sources. The primary source is the data provided by the company itself in its annual report and required disclosures. The annual report comprises of balance sheet, income statement, the statement of cash flows as well as footnotes to these statements, chairman's speech, the director's report, the auditor's report and accounting policy changes. Schedules, supplementary statements, explanatory notes, footnotes etc. supports these statements.

A. Financial Analysis – Meaning and Concept

Financial analysis means proper arrangement of the financial data and methodical classification of the data given in the financial statement and regrouped into their distinct and different components parts. It involves the division of facts based on some definite plans, classifying them into classes based on certain condition and presenting them in most convenient simple and understandable form. It is really an art, it involves many processes; like arrangement, analysis, establishing relations between available facts and drawing conclusion on that basis.

The figures given in the financial statement will not help unless they are put in a simplified form. Interpretation means explaining the meaning and significance of the data so simplified. It is comparison and examination of components for making conclusion about the profitability, efficiency and liquidity position of the business.

B. Objectives of Financial Analysis

The basic objectives of financial analysis are as follows:

i. To examine the financial health of a firm;

ii. To evaluate the profitability of the enterprise;

iii. To understand the long-term and short-term solvency position of the firm;

iv. To study the debt servicing capacity of the firm;

C. Importance and Benefits of Financial Analysis and Interpretation

The significance of financial statements lies not in their preparation but in their analysis and interpretation. The analysis and interpretation of financial statement is the comprehensive and intelligent presentation of information that helps the interested parties for judgement and decision-making. Robert H. Wessal defined analysis and interpretation of financial statement as a technique of X-Raying the financial position as well as the progress of a company.

Various parties like management, shareholders, creditors, investors, and government etc. are interested in financial statement analysis.

The importance and benefits of financial analysis from the viewpoint of various internal and external stakeholders are mentioned below:

i. **Management:** According to Robert. H. Wessel, through the financial statement analysis the management can measure the effectiveness of its own policies; can determine the ability of adopting new policies and procedures and can measure the result of their managerial efforts. They can also study the relative efficiency and weakness of different departments and can find the ways to overcome the deficiencies.

ii. **Investors:** From this analysis, the investor will be able to know the earning capacity, soundness of dividend policies, and degree of financial growth. By analysing the financial statement, the prospective investor can take investment decision.

iii. **Creditors:** From this analysis, creditors will be able to know the credit worthiness, capacity to pay the outsiders obligation of the firm.

iv. **Financial Analysts and Research Scholars:** Financial analysts and scholars can look through the financial policies persuade by the management and offered constructing suggestion to overcome the financial problems.

v. **Analysts:** An analyst can study the extent of concentration of economic power, can analyse the financial policies, and can make an option about the pattern of investment.

vi. **Labour Union**: The labour union can understand the income and expenditure of the firm. Accordingly bargain the fair wages and, other benefits.

vii. **Legislation:** Legislation can get the information about licensing, price fixing and other regulations.

D. Limitations of Financial Analysis and Interpretation

Financial statement is prepared with the object of presenting a periodical report on the progress by management and deals with the status and result of the business. But these objectives are not fulfilled due to following limitations:

i. It is difficult to decide on the proper basis of comparison.

ii. The comparison is difficult because of difference in situation of two companies or of one company over years.

iii. It is invalid if the price level changes.

iv. Historical financial statements are not the indicators of future.

E. Types of Financial Analysis

Different types of financial analysis are summarized below:

1. **According to Users' Perspective :** Financial analysis is of two types – external analysis and internal analysis.

   (a) **External Analysis:** If analysis of financial statement is made by external persons who are not directly related to the accounting records of the concern and have to depend on published financial statement is called external analysis. Outsiders use only the figures of financial statement and other supplementary of the annual reports to get an idea and to take appropriate decision. As it is used by the external people so it is called external analysis. Generally, it is made by bank, money lenders, creditors, govt. agencies, prospective investors etc.

   (b) **Internal Analysis:** If the analysis of financial statement is made by internal persons who are related to the accounting records of the concerns from internal records and books is known as internal analysis. It is made by members of the concern such as, staff of finance and accounting department, executives etc. to help the management in assessing the profitability, solvency, liquidity etc. and to indicate the reasons of weakness of the firm. This is conducted by the people inside the firm and for the benefits of the organisation so it called internal analysis.

2. **According to Modus Operandi of Analysis (or Method of Operation) :** Financial analysis may be of two types: - Horizontal and vertical:

   (a) **Horizontal Analysis:** When financial statement of one year of a particular organisation are analysed and interpreted with comparing another year or years, it is called horizontal analysis.

   (b) **Vertical Analysis:** When financial statement of an organisation for one period is analyzed then it is called vertical analysis. This analysis is useful in inter-firm comparison.

3. **According to Objectives:** Financial statement analysis may be long-term and short-term analysis.

   (a) **Long-Term Analysis:** Long-term analysis is made to study long-term financial stability, solvency, and profitability of a concern. This analysis helps to know whether the firm will survive in long run and helps in long-term financial planning.

   (b) **Short-Term Analysis:** Short-term analysis is made to study current financial stability, solvency, and profitability of a concern. This analysis helps to know whether the firm will have sufficient fund to t meet its short-term requirement that helps in working capital analysis.

F. Financial Analysis - Traditional Approach vs. Modern Approach

Financial Analysis is a process of evaluating the relationship between component parts of financial statement to obtain a better understanding of the firm's position and performance. This analysis is made based on two approaches – Traditional approach and Modern approach.

(i) **Traditional Approach**: Traditional approach refers to subject matter of financial statement analysis as a separate branch of study. It is based on basic conceptual and analytical framework. It is not applicable in internal decision making.

(ii) **Modern Approach**: Modern approach of financial analysis is broad approach that provides a conceptual and analytical framework for financial decision making. It is an integral part of overall management.

So, there are certain differences between traditional approach and modern approach are mentioned below:

Table 3.1: Differences between Tradeitional and Modern Approach

Traditional Approach	Modern Approach
(i) In traditional approach, financial statement analysis is not an integral part of the various disciplines concerned with decision making. Economists and finance experts do not rely on the information reported in the financial statements and they ignore financial statement analysis	(i) In modern approach, financial statement processing system as an information processing system designed to generate relevant information as input to the application of various decision making models, e.g., the portfolio selection model, bank lending decision models etc.
(ii) Here the frameworks (within which analytical methods and techniques are developed) are not defined appropriately, resulting in the lack of direction and progress.	(ii) Here tools and techniques are developed and tested within the well-defined framework of decision theory.
(iii) Here financial statement analysis is completely detached from economic theories and models	(iii) Here financial statement analysis is closely connected with economic and finance models.
(iv) Here no statistical tools or techniques are used, but simple mathematical tools like ratio, percentage, average etc. are applied.	(iv) Here various statistical tools and techniques as well as complicated mathematical models are used.
(v) Here accounting data are conventionally reported in financial statements.	(v) Here reported accounting data, unreported accounting data (such as, market value of assets) and non-accounting data (e.g., share prices) are taken into consideration.

G. Tools of Financial Analysis

The important methods or tools used in financial statements are shown below:

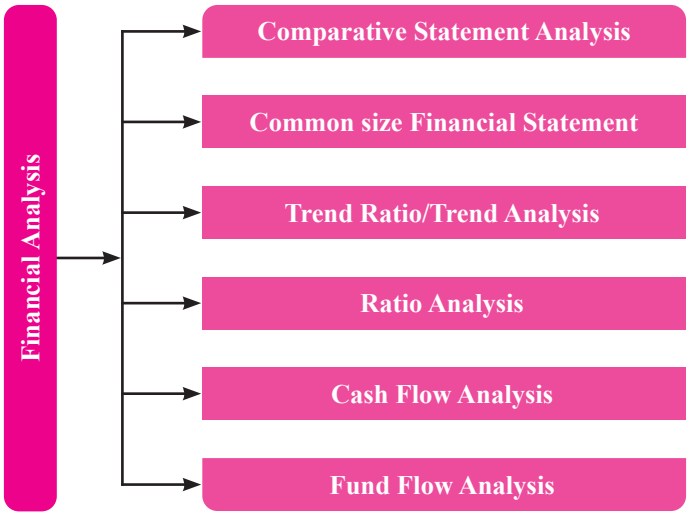

Figure 3.1: Important methods or tools used in Financial Statements

Comparative, Common-Size Financial Statements and Trend Analysis

3.1

The analysis which is based on single year's statement, will not be very much useful. For this purpose, comparative analysis, common size analysis, trend analysis are necessary. In this section, comparative, common-size financial statements and trend analysis are discussed.

3.1.1 Comparative Financial Analysis

If the financial statement is re-casted for comparing all the elements of financial conditions from year to year in absolute term as well as in percentage then the re-casted statement is called comparative financial statement.

This statement is designed to provide time view of various elements of financial statement. This statement is made by: -

(i) Showing absolute money values of each element of Income Statement and Balance Sheet of different periods.

(ii) Showing increase / decrease in absolute money value of each element by deducting elements of current period from past period.

(iii) Showing increase / decreasing value in terms of percentage

$$\text{i.e., } \frac{\text{Increasing/Decreasing amount}}{\text{Amount in the past period}} \times 100$$

(iv) Keeping in mind that the principles and procedures followed in the collection, and presentation of data should not materially differ over the periods.

Advantages

The advantages of Comparative Financial Analysis are as follows

(i) Figures for two or more periods are placed side by side to facilitate inter-firm comparison and in horizontal analysis.

(ii) It brings out more clearly the nature and trend of current changes that affect the enterprise.

(iii) It helps in estimating weakness in the operating cycle, financial health and future position of the business.

Disadvantages

(i) Comparative Financial Analysis may be misleading, if frequent changes have been allowed in principles and procedures over the periods.

(ii) Without the knowledge of internal analysis, it may be extremely misleading.

(iii) It does not show the relation of any items to total assets or to total liabilities or to total net sales in a year.

(iv) Proper comparison between two or more firms cannot be possible by this statement because there is no common base of comparison.

3.1.2 Common Size Statement Analysis

Common size financial statement is re-stated financial statement showing percentage of total items with common base for comparison.

This statement is made in the following procedure: -

(i) Assets side is classified in fixed assets, investments, current assets (CA), fictitious assets showing individually and in total. Then total assets (TA) are taken as common base 100.

$$\text{Then, } \frac{\text{Investment}}{\text{Total Assets}} \times 100; \quad \frac{\text{Current Assets}}{\text{Total Assets}} \times 100; \quad \frac{\text{Fictitious Assets}}{\text{Total Assets}} \times 100 \text{ etc. are calculated}$$

(ii) Liabilities side is classified in proprietor's fund, long-term loan, and current liabilities showing individually and in total. Then percentage of each liability to total liability is calculated accordingly like assets side.

(iii) Income statement is classified in sales, cost of goods sold, operating expenses, net profit, interest, tax, EAT (earning after tax) etc. Then percentage of each element to sales is calculated.

Advantages

(i) Common size statement shows the changes over the years in relation to total assets, total liabilities, sales.

(ii) It helps in inter-firm comparison with common base.

(iii) It helps in vertical analysis of figures.

(iv) It helps in understanding financial strategy of the firms in comparison.

(v) It shows the relative efficiency of each cost items of two firms.

Disadvantages

(i) It shows the percentage of each item to the total in each period but not changes of each items from period to period.

(ii) Its observations are not very useful because there are more definite norms for the proportion of each item to total.

(iii) If there is no uniform costing system, no same accounting practice among the all firms of an industry, then it is meaningless for studying the comparative financial position of two firms.

3.1.3 Trend Analysis / Trend Ratio Analysis

Trend analysis or trend ratio is an index number of each financial item in the financial statement of different periods. The method of calculating trend percentages involves the calculation of percentage relation of necessary items with the same items of base year. i.e., trend percentages are not calculated for all items of financial statements.

They are calculated only for major items since the purpose is to highlight important changes. On the other hand, any year may be taken as base year – generally the earliest year is taken as base. Any intervening year may also be taken as the base year.

$$\text{Thus, Trend Percentage or Trend Ratio} = \frac{\text{Value of each item is financial statement of any period}}{\text{Value of same item is financial statement of base period}} \times 100$$

While calculating trend percentages care should be taken regarding the following matters: -

(i) The uniform accounting system should be followed from year to year for horizontal analysis.

(ii) The accounting principles and practices should follow consistency convention throughout the period of analysis. Without such consistency, the comparison will be adversely affected.

(iii) The base year should be that normal year which is monitored and representative of the items shown in the statement.

(iv) Trend percentages should be calculated only for items having logical relationship with one another.

(v) Trend percentages should be studied after considering the absolute figures on which they are based, otherwise, they may give misleading results. For example, one expense may increase from ₹ 100 to ₹ 200 while other expenses may increase from ₹ 10,000 to ₹ 15,000. In the first case, trend percentage will show 100% increase while in second case it will show 50% increase. This is misleading because in the first case, the change though 100% is not at all significant in Absolute/Monetary real terms as compared to second case.

(vi) The figures for the current year should also be adjusted in the light of price level changes as compared to the base year before calculating the trend percentage, otherwise comparison will be meaningless.

Advatages

(i) It shows the trend of items with passage of time.

(ii) It shows the nature and rate of movement of various financial factors.

(iii) It shows horizontal and vertical analysis to reflect the behaviour of various financial items with passage of time.

(iv) It helps in estimating the financial factor in future.

Disadvatages

If there is no uniform accounting system year after year, then trend ratios give misleading result.

(i) It does not take into consideration the inflation accounting system. So, figures of base period are incomparable with the figures of current period in case of inflation.

(ii) Trend ratios must be always read with absolute data on which they are based, otherwise the conclusion drawn may be misleading. It may be said that a 10% change in trend ratio may represent an absolute change of ₹1000 only in one item, while a 10% change in another item may represent an absolute change of ₹ 10,000.

Illustration 1

From the following income statement, prepare a common size statement and also interpret the results.

Income Statement for the year ended 31st March

Particulars	2023 (₹)	2024 (₹)
Net Sales	10,50,000	13,50,000
Less: Cost of Goods Sold	5,70,000	6,45,000
Gross Profit	4,80,000	7,05,000
Less: Other Operating Expenses	1,50,000	2,16,000
Operating Profit	3,30,000	4,89,000
Less: Interest on Long-term Debt	60,000	51,000
Profit Before Tax (PBT)	2,70,000	4,38,000

Solution :

Common Size Statement for the year ended 31st March, 2023 and 2024

Particulars	2023	2024
Net Sales	100%	100%
Less: Cost of Goods Sold $\left(\frac{\text{Cost of Goods Sold}}{\text{Net Sales}} \times 100\right)$	54.3%	47.8%
Gross Profit $\left(\frac{\text{Gross Profit}}{\text{Net Sales}} \times 100\right)$	45.7%	52.2%
Less: Other operating expenses $\left(\frac{\text{Other Operating Expenses}}{\text{Net Sales}} \times 100\right)$	14.3%	16%
Operating Profit $\left(\frac{\text{Operating Profit}}{\text{Net Sales}} \times 100\right)$	31.4%	36.2%
Less: Interest on Long-term Debt $\left(\frac{\text{Interest}}{\text{Net Sales}} \times 100\right)$	5.7%	3.8%
Profit Before Tax (PBT) $\left(\frac{\text{PBT}}{\text{Net Sales}} \times 100\right)$	25.7%	32.4%

Comments:

(i) The PBT to net sales has increased from 25.7% in the year 2022-23 to 32.4% in the year 2023-24. It indicates that the profit earning capacity of the company has improved during the study period. This improvement in the profitability of the company has been mainly due to significant reduction in the cost of goods sold of the company. It may occur due to fall down of input market or may occur due to improvement in the efficiency of the company. As other operating expenses are higher in 2023-24 so, it is clear that company has been operated with tight supervision, tight inventory control for reduction of Cost of Goods Sold.

(ii) The interest on long-term debt to net sales has declined from 5.7% in the 2022-23 to 3.8% in 2023-24. It implies that the financial burden of the company has reduced significantly during the study period. Higher operating profit or fund from operation has been utilised for repayment of long-term debt, so that the financial risk associated with the company has declined significantly during the study period.

Illustration 2

From the following figures prepare a common size comparative statement and comment on the results.

Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
	₹ (in lakh)	₹ (in lakh)	₹ (in lakh)	₹ (in lakh)	₹ (in lakh)
Cost of Materials	150	220	250	200	200
Labour Cost	200	140	150	150	175
Conversion Cost	150	150	140	200	175
Total Manufacturing cost	500	510	540	550	550
Sales Revenue	1,200	1,100	1,000	1,000	950
Gross Profit	700	590	460	450	400
Less: Other Operating Expenses	300	220	200	200	180
Operating Profit	400	370	260	250	220

Solution:

Common Size Comparative Income Statement

Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
Cost of Materials $\frac{\text{Cost of Materials}}{\text{Sales}} \times 100$	12.5%	20%	25%	20%	21.05%
Labour Cost $\frac{\text{Labour Cost}}{\text{Sales}} \times 100$	16.67%	12.73%	15%	15%	18.42%
Conversion Cost $\frac{\text{Conversion Cost}}{\text{Sales}} \times 100$	12.50%	13.64%	14%	20%	18.42%
Total Manufacturing Cost $\frac{\text{Total Manufacturing Cost}}{\text{Sales}} \times 100$	41.67%	46.36%	54%	55%	57.89%
Sales Revenue	100%	100%	100%	100%	100%
Gross Profit $\frac{\text{Gross Profit}}{\text{Net Sales}} \times 100$	58.33%	53.64%	46%	45%	42.11%

Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
Other Operating Expenses $\frac{\text{Other Operating Expense}}{\text{Net Sales}} \times 100$	25%	20%	20%	20%	18.95%
Operating Profit $\frac{\text{Operating Profit}}{\text{Sales}} \times 100$	33.33%	33.64%	26%	25%	23.16%

Comments:

From the above analysis, it can be concluded that there was a clear upward rising trend in the manufacturing cost of goods sold during the study period. As a result, gross profit to sales has been decreased very significantly during the same period. It was 58.33% in the year 2019-20 which ultimately reduced to 42.11% in the ultimate year of the study period i.e., 2023-24. It implies that operational efficiency of the company has been reduced very significantly during the period.

Illustration 3

From the following balance sheet prepare a common size statement and comment.

Particulars	Amount (₹) 31.03.2023	Amount (₹) 31.03.2024
Shareholders' Fund		
Equity Share Capital (₹10 each)	7,20,000	7,20,000
Reserve & Surplus	2,88,000	5,46,000
Non-current Liabilities		
Long-term debt	5,46,000	5,08,000
Current Liabilities		
Current Liabilities & Provisions	2,40,000	1,75,500
Total	**18,00,000**	**19,50,000**
Non-current Assets		
Fixed Assets	12,06,000	11,70,000
Current Assets		
Inventory	2,52,000	3,51,000
Debtors	1,80,000	1,95,000
Bank	1,62,000	2,34,000
Total	**18,00,000**	**19,50,000**

Solution:

Common Size Balance Sheet as on 31.03.2023 & 31.03.2024

Particulars	On 31.03.2023 % of total	On 31.03.2024 % of total
Shareholders' Fund		
Equity Share Capital $\left(\frac{\text{Share Capital}}{\text{Total Liabilities}} \times 100\right)$	40%	36.92%
Reserve & Surplus $\left(\frac{\text{Reserve \& Surplus}}{\text{Total Liabilities}} \times 100\right)$	16%	28%
Total Shareholders Fund/Owners' Equity	56%	64.22%
Non-current Liabilities		
Long-Term Debt $\left(\frac{\text{Long-Term Debt}}{\text{Total Liabilities}} \times 100\right)$	30.33%	26.05%
Current Liabilities		
Current Liabilities & Provision $\left(\frac{\text{Current Liabilities}}{\text{Total Liabilities}} \times 100\right)$	13.33%	9%
	100%	100%
Non-current Assets		
Fixed Assets $\left(\frac{\text{Fixed Assets}}{\text{Total Assets}} \times 100\right)$	67%	60%
Current Assets		
Inventory $\left(\frac{\text{Inventory}}{\text{Total Assets}} \times 100\right)$	14%	18%
Debtors $\left(\frac{\text{Debtors}}{\text{Total Assets}} \times 100\right)$	10%	10%

Particulars	On 31.03.2023 % of total	On 31.03.2024 % of total
Bank $\left(\frac{\text{Bank}}{\text{Total Assets}} \times 100\right)$	9%	12%
Total Current Assets	33%	40%
Total Assets	100%	100%

Comments:

(i) The proportion of owner's equity to total liabilities of the company has been increased from 56% to 64.92% whereas the proportion of long-term debt to total liabilities has been decreased from 30.33% to 26.05% in the year 2023-24. So, we can conclude that the dependency on outsiders has been decreased and degree of financial risk associated with the company has been reduced during the study period.

(ii) The percentage of current assets to total assets has been increased from 33% to 40% whereas the percentage of current liabilities to total liabilities decreased from 13.33% to 9% in the year 2023-24. Therefore, it indicates that the liquidity position of the company has been significantly improved during the period under study.

But reduction of fixed assets may hamper the long-term stability and operating efficiency of the company.

Illustration 4

The following are the income statements of A Limited for the years ended 31.03.2023 and 31.03.2024

	31.03.23 (₹)	31.03.24 (₹)
Net Sales	1,70,000	1,90,400
Less: Cost of goods sold	1,05,000	1,20,000
Gross Profit (P)	65,000	70,400
Administrative expenses (A)	13,200	14,960
Selling expenses:		
Advertisement expenses	3,000	4,000
Other selling expenses	40,800	41,800
Total selling expenses (B)	43,800	45,800
Operating expenses (A + B)	57,000	60,760
Operating Profit (D) [D = P – (A + B)]	8,000	9,640
Other Incomes (E)	6,400	9,200
Other expenses (F)	6,800	4,800
Profit before tax (PBT) [PBT = D + E – F]	7,600	14,040
Income tax (T)	3,800	6,200
Profit after tax (PAT) [PAT = PBT – T]	3,800	7,840

Prepare a comparative income statement and comment on the performance of A Limited.

Solution:

Comparative Income Statement of A Ltd. for the years ended 31st March, 2023 and 2024

Particulars	31.03.23 (₹)	31.03.24 (₹)	Amount of increase (+) or decrease (-) (₹)	Percentage increase (+) or decrease (-) (₹)
Net Sales	1,70,000	1,90,400	(+) 20,400	Note (i) (+) 12.0
Less: Cost of goods sold	1,05,000	1,20,000	(+) 15,000	Note (ii) (+) 14.3
Gross Profit (P)	65,000	70,400	(+) 5,400	(+) 8.3
Administrative expenses (A)	13,200	14,960	(+) 1,760	(+) 13.3
Selling expenses:				
Advertisement expenses	3,000	4,000	(+) 1,000	(+) 33.3
Other selling expenses	40,800	41,800	(+) 1,000	(+) 2.5
Total selling expenses (B)	43,800	45,800	(+) 2,000	(+) 4.6
Operating expenses (A + B)	57,000	60,760	(+) 3,760	(+) 6.6
Operating Profit (D) [D = P – (A + B)]	8,000	9,640	(+) 1,640	(+) 20.5
Other Incomes (E)	6,400	9,200	(+) 2,800	(+) 43.8
Other expenses (F)	6,800	4,800	(–) 2,000	(–) 29.4
Profit before tax (PBT) [PBT = D + E – F]	7,600	14,040	(+) 6,440	84.7
Income tax (T)	3,800	6,200	(+) 2,400	(+) 63.2
Profit after tax (PAT) [PAT = PBT – T]	3,800	7,840	(+) 4,040	(+) 106.3

Notes: Calculation for percentage increase (+) or decrease (–):

(i) $\left(\frac{₹\,20,400}{₹\,1,70,000}\times 100\right)$ = 12%

(ii) $\left(\frac{₹\,15,000}{₹\,1,05,000}\times 100\right)$ = 14.3%; and so on.

Comments:

Comparative income statement shows the income and expenses of two periods of same company, absolute changes of each item for the year ended 31.03.2024 over 31.03.2023 and also shows percentage change.

The following comments can be made on the performance of A Ltd.:

(i) Sales of A Ltd. has been increased by ₹ 20,400 during the year 2023-24 over 2022-23. But, the cost of goods sold has also increased by ₹ 15,000 in the same period. i.e., sales have improved by 12% and cost of goods sold has increased by 14.3%. So, Gross Profit has not improved markedly. Cost of goods sold may increase due to higher quantity of sales or due to higher input cost. As sale value has increased so it is clear cost of goods sold has increased due to higher quantity of sales. If such quantity has been sold at previous price, then sales value has been increased with higher amount. But here sales value has not increased significantly. It indicates that the addition in sales has been due to lowering of sale price. It is also clear from advertisement expenses. The increase in advertisement expenses (33.3%) has been much higher than the percentage increase reduction of sale price was necessary in order to higher quantity of sales. Such situation may also arise due to new product launching where huge advertisement is necessary and reduction of sale price is necessary.

(ii) There has been a substantial improvement in other incomes, both in relative term (43.8%) and in absolute term (₹ 2,800). Similarly, there has been a considerable reduction in other expenses in relative term (29.4%) as well as in absolute term (₹ 2,000). These items have been responsible for the increase in profit before tax (PBT) for the period under study by 84.7%. It implies that more emphasis has been given by the management of the company on earning non-operating profits as compared to the operating profits.

Illustration 5

Compute the Trend Ratios from the following data and comment.

Particulars	Balances as on 31st March			
	2021 (₹)	2022 (₹)	2023 (₹)	2024 (₹)
Cost of materials consumed	2,00,000	2,50,000	2,00,000	1,80,000
Labour cost	1,50,000	1,50,000	2,00,000	1,25,000
Other expenses	1,50,000	2,00,000	1,00,000	1,50,000
Cost of sales	5,00,000	6,00,000	5,00,000	4,55,000
Profit	3,00,000	3,00,000	2,50,000	3,45,000
Sales	8,00,000	9,00,000	7,50,000	8,00,000

Solution:

Computation of Trend Ratio (%)

	2020-2021	2021-2022 $\frac{2021-22}{2020-21} \times 100$	2022-2023 $\frac{2022-23}{2020-21} \times 100$	2023-2024 $\frac{2023-24}{2020-21} \times 100$
Cost of materials consumed	100	125	100	90
Labour cost	100	100	133.3	83.3
Other expenses	100	133.3	66.7	100
Cost of sales	100	120	100	91
Profit	100	100	83.3	115
Sales	100	112.5	93.8	100

Comment: The reduction in cost of sales in the year 2022-23 and 2023-24 is mainly due to reduction in cost of material consumed. Except that there is fluctuating trend in all the items disclosed in the financial statement during the period under study. So, no definite conclusion can be drawn from the above analysis.

Note:

Calculation of Trend Ratio:

$$\frac{\text{Current year's cost of material Consumed}}{\text{Base year's cost of material consumed}} \times 100$$

$$= \frac{₹\ 2,50,000}{₹\ 2,00,000} \times 100$$

= 125% and so on.

Financial Ratio Analysis

3.2

3.2.1 Financial Ratio Analysis

Ratio analysis is the process of determining and interpreting numerical relationships based on financial statements. A ratio is a statistical yard stick that provides a measure of the relationship between variables figures. This relationship can be expressed as percent (i.e., cost of goods sold as a percent of sales) or as a quotient (i.e., current assets as a certain number of times the current liabilities).

As ratios are simple to calculate and easy to understand there is a tendency to employ them profusely. While such statistical calculations stimulate thinking and develop understanding there is a danger of accumulation of a mass of data that obscures rather than clarifies relationships. The financial analyst has to steer a careful course. His experience and objective of analysis help him in determining which of the ratios are more meaningful in a given situation.

Ratios are used by the (i) Owners or investors; (ii) Creditors; and (iii) Financial executives. Although all these three groups are interested in the financial conditions and operating results of an enterprise the primary information that each seeks to obtain from these statements is to serve. Investors desire a primary basis for estimating earning capacity. Creditors (trade and financial) are concerned primarily with liquidity and ability to pay interest and redeem loan within a specific period. Management is interested in evolving analytical tools that will measure costs, efficiency, liquidity and profitability with a view to making intelligent decisions.

Objectives of Financial Ratio Analysis

The importance of financial ratio analysis lies in the fact that it presents data on a comparative basis and enables the drawing of inferences regarding the performance of the firm. Ratio analysis helps in concluding the following aspects:

(i) **Liquidity Position:** Ratio analysis helps in determining the liquidity position of the firm. A firm can be said to have the ability to meet its current obligations when they become due. It is measured with the help of liquidity ratios.

(ii) **Long-term Solvency:** Ratio analysis helps in assessing the long-term financial viability of a firm. Longterm solvency measured by leverage/capital structure and profitability ratios.

(iii) **Operating Efficiency:** Ratio analysis determines the degree of efficiency of management and utilization of assets. It is measured by the activity ratios.

(iv) **Overall Profitability:** The management of the firm is concerned about the overall profitability of the firm which ensures a reasonable return to its owners and optimum utilization of its assets. This is possible if an integrated view is taken and all the ratios are considered together.

(v) **Inter-firm Comparison:** Ratio analysis helps in comparing the various aspects of one firm with the other.

Significance of Ratio Analysis

(i) Commercial bankers and trade creditors and the institutional lenders are mostly concerned with the ability of a borrowing enterprise to meet its financial obligations timely. As a result, they are most interested in ratios like the current ratio, acid test ratio, turnover of receivables, inventory turnover, coverage of interest by level of earnings, etc.

(ii) Long-term creditors would be interested in the working capital position of the borrower as an indication of ability to pay interest and principal in case earnings decline. So, they are interested in the ratios of total debt to equity, net worth to total assets, long-term debt to equity, long-term debt to net working capital, fixed assets to net worth, fixed assets to long-term debt, fixed debt to capitalization etc. The number of times fixed charges are covered by earnings before interested and taxes will be of particular interest for such long-term creditors.

(iii) Investors in shares are primarily interested in per share ratio like earnings per share, book value per share, market price per share, dividends per share, etc. They would also be interested in knowing the capitalization rate (EPS Ratio = Earnings per share/ Price per share) which is the reciprocal of P/E Ratio (Price/ Earnings ratio) and also the dividend yield, i.e.; D/P Ratio.

Advantages of Ratio Analysis

Ratio analysis is useful in assessing the performance of a firm in respect of the following purposes:

(i) **To measure the liquidity position:** The purpose of ratio analysis to measure the liquidity position of a firm. Whether the firm is able to meet its current obligations when they become due or not? A firm can be said to be liquid, if it has sufficient liquid funds to pay the interest charges on shortterm debt within a year. The liquidity ratios are useful in credit analysis by banks and other financial institutions.

(ii) **To know the solvency position:** Ratio analysis is helpful for assessing the long-term financial liability of the firm. The long-term solvency is measured through the leverage, and profitability ratios. These ratios reveal the strengths and weaknesses of a firm in respect of the solvency position. The leverage ratios indicate the proportion of various sources of finance in the firm's capital structure, particularly the ratio of debt and equity share capital.

(iii) **Operating efficiency or turnover of the firm:** The ratios are helpful in measuring the operating efficiency or the turnover of the firm. These ratios indicate the efficiency in utilizing the assets of the firm such as fixed assets turnover ratio, total resources turnover ratio etc.

(iv) **To assess the profitability position of the firm:** The ratios are useful to assess and measure the profitability of the firm in respect of sales and the investments. These ratios are concerned about the over –all profitability of the firm.

(v) **Inter - firm and intra – firm comparison:** Ratios are not only reflecting the financial position of a firm, but also serves as a tool for remedial actions. This is made possible only due to inter-firm comparison. This would demonstrate the relative position of the firm vis-à-vis its competition. If there is any variance in the ratios either with the industry average or with, those of competitors, the firm has to identify the reasons and would take remedial measures.

(vi) **Trend analysis:** The trend analysis of ratios indicates whether the financial position of a firm is improving or deteriorating over the year. The significance of a trend analysis of ratio lies in the fact that the analysis can know the direction of movement whether the movement is favourable or unfavourable. Thus, ratio analysis is considered better than a mere comparison of figures in carrying out an over – all appraisal of a company's business.

Standards for Comparison

For making a proper use of ratios, it is essential to have fixed standards for comparison. A ratio by itself has very little meaning unless it is compared to some appropriate standard. Selection of proper standards of comparison is most important element in ratio analysis. The four most common standards used in ratio analysis in Financial Management are: absolute, historical, horizontal and budgeted.

(i) **Absolute:** Absolute standards are those which become generally recognized as being desirable regardless of the type of company, the time, stage of business cycle and the objectives of the analyst.

(ii) **Historical:** Historical (also known as internal) standards involves comparing a company's own past performance as a standard for the present or future. But this standard may not provide a sound basis for judgment as the historical figure may not have represented an acceptable standard. It is also called as intrafirm comparison.

(iii) **Horizontal:** In case of horizontal (external) standards, one company is compared with another or with the average of other companies of the same nature. It is also called as inter-firm comparison.

(iv) **Budgeted:** The budgeted standard is arrived at after preparing the budget for a period. Ratio developed from actual performance are compared to the planned ratios in the budget in order to examine the degree of accomplishment of the anticipated targets of the firm.

Limitations of Ratio Analysis

(i) It is always a challenging job to find an adequate standard. The conclusions drawn from the ratios can be no better than the standards against which they are compared.

(ii) It is difficult to evaluate the differences in the factors that affect the company's performance in a particular year as compared with that of another year and that of another company. The task becomes more difficult when comparison is made of one company with another when they are of substantially different size, age and diversified products.

(iii) While making comparisons of ratios, due allowance should be made for changes in price level. A change in price level can seriously affect the validity of comparisons of ratios computed for different time periods and particularly in case of ratios whose numerator and denominator are expressed in different units of currency.

(iv) Comparisons are also become difficult due to differences in definition. The terms like gross profit, operating profit, net profit etc. have not got precise definitions and there is considerable diversity in practice as to how they should be measured.

(v) A balance sheet may fail to reflect the average or typical situation, as it is prepared as of one moment of time. It ignores short-term fluctuations in assets and equities that may occur within the period covered by the two Balance Sheet dates.

(vi) Various differences are found among the accounting methods used by different companies which variously affect the comparability of financial statements. Methods of recording and valuing assets, write-offs, costs, expenses etc. differ from company to company.

(vii) As ratios are simple to calculate and easy to understand, there is a tendency to over-employ them. While such statistical approach stimulates thinking, it is also likely to lead to the accumulation of a mass of data; if due care is not taken, that might obscure rather than clarify relationships.

Classification of Ratios

In view of the requirements of the various users of ratios, we may classify them into the following important categories:

A. Profitability Ratios

B. Activity Ratios

C. Solvency Ratios

D. Valuation and Payout Ratios

These are discussed below:

A. Profitability Ratios

These ratios give an indication of the efficiency with which the operations of business are carried on. The following are the important profitability ratios:

(i) Gross Profit Ratio (GPR):

This ratio expresses the relationship between Gross Profit and Net Sales. It can be computed as follows:

$$\text{GPR} = \frac{\text{Gross Profit}}{\text{Net Sales (i.e., Less sales returns)}} \times 100$$

Significance: The ratio indicates the overall limit within which a business must manage its operating expenses. It also helps in ascertaining whether the average percentage of mark-up on the goods is maintained. A high gross profit margin ratio is a sign of good management. A low gross profit margin may reflect higher cost of goods sold due to the firm's inability to purchase raw materials at favourable terms, inefficient utilization of plant and machinery, or over-investment in plant and machinery, resulting in higher cost of production.

(ii) Net Profit Ratio (NPR):

The ratio indicates net margin earned on a sale of ₹ 100.

It is calculated as follows:

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

Significance: The ratio helps in determining the efficiency with which the affairs of a business are being managed. Constant increase in the above ratio year after year is a definite indication of improving conditions of the business.

(iii) Operating Profit Ratio:

The net profit margin is indicative of management's ability to operate the business with sufficient success not only to recover from revenues of the period, the cost of merchandise or services, the expenses of operating the business (including depreciation) and the cost of the borrowed funds, but also to leave a margin of reasonable compensation to the owners for providing their capital at risk.

$$\text{Operating Profit Ratio} = \frac{\text{Earnings before Interest and Taxes (EBIT)}}{\text{Net Sales}} \times 100$$

(iv) Expenses Ratio:

Another profitability ratio related to sales is the expenses ratio. It is computed by dividing expenses by sales. The term 'expenses' includes (i) cost of goods sold, (ii) administrative expenses, (iii) selling and distribution

expenses, (iv) financial expenses but excludes taxes, dividends and extraordinary losses due to theft of goods, good destroyed by fire and so on. There are different variants of expenses ratios. That is,

(a) $$\text{Cost of Goods Sold Ratio} = \frac{\text{Cost of Goods Sold}}{\text{Net Sales}} \times 100$$

(b) $$\text{Operating Expenses Ratio} = \frac{\text{Operating Expenses}}{\text{Net Sales}} \times 100$$

(v) Return on Investment:

An investor or shareholder or other interested parties want to know how much return they will get from their investment. From the firm's perspective investment may refer to total assets or net assets. Net assets are total assets minus current liabilities. Shareholders' investment is reflected by total equity (net worth). Investments made by shareholders and debtholders is known as capital employed or invested capital. Invested capital is capital employed minus cash, cash equivalents and goodwill. Based on the different aspects, we can calculate the following Return on Investment (ROI) ratios:

(a) Return on Assets (ROA): This ratio measures the operating efficiency of a firm's assets in generating profit without effect of methods of financing. It can be calculated as follows:

$$\text{Post-tax Return on Net Assets (RONA)} = \frac{\text{Earnings before Interest and Taxes (1-Tax)}}{\text{Total Assets}}$$

$$\text{Pre-tax Return on Net Assets (RONA)} = \frac{\text{Earnings before Interest and Tax}}{\text{Total Assets}}$$

Earnings before Interest and Tax (EBIT) is the operating income of a firm and excludes the effect of debt. Total Assets is sum of non-current and current assets.

(b) Return on Capital Employed (ROCE): This ratio is useful to measure the return on investors' capital employed by the firm. Capital employed is the sum of debt (long-term and short-term debt) and equity which is related to the operating income of the firm. RONA can be calculated as follows:

$$\text{Post-tax Return on Capital Employed (ROCE)} = \frac{\text{Earnings before Interest and Taxes (1-Tax)}}{\text{Debt + Equity}}$$

$$\text{Pre-tax Return on Capital Employed (ROCE)} = \frac{\text{Earnings before Interest and Tax}}{\text{Debt + Equity}}$$

(c) Return on Equity (ROE): This ratio is calculated to see the profitability of owners' investment. The shareholders' equity or net worth will include paid up share capital, share premium and reserves and surplus less accumulated loss. ROE can be calculated as under:

$$\text{Return on Equity (ROE)} = \frac{\text{Profit after Tax}}{\text{Equity}}$$

ROE indicates how well the firm has used the resources of owners. In fact, this ratio is one of the most important relationships in financial analysis. The earning of a satisfactory return is the most desirable objective of a business.

B. Turnover Ratios / Activity Ratios

These ratios indicate the efficiency with which capital employed is rotated in the business. The various turnover ratios are as follows:

(i) Inventory Turnover Ratio:

Inventory turnover shows the efficiency of the firm in producing and selling its product. It is calculated as follows:

$$\text{Inventory Turnover Ratio} = \frac{\text{Cost of Goods Sold}}{\text{Average Inventory}}$$

The average inventory is the average of opening and closing balances of inventory. In a manufacturing company inventory of finished goods is used to calculate inventory turnover.

In a manufacturing firm, inventory consists of two more components: (a) raw materials and (b) work-inprocess. An analyst may also be interested in examining the efficiency with which the firm converts raw materials into work-in-process and work-in-process into finished goods.

(a) $$\text{Raw Material Inventory Turnover Ratio} = \frac{\text{Raw Materials Consumed}}{\text{Average Raw Material Inventory}}$$

(b) $$\text{Work-in-Progress Inventory Turnover Ratio} = \frac{\text{Cost of Production}}{\text{Average Work-in-Progress Inventory}}$$

The inventory turnover shows how rapidly the inventory is turning into receivable through sales. Generally, a high inventory turnover is indicative of good inventory management. A low inventory turnover implies excessive inventory levels than warranted by production and sales activities, or a slow-moving or obsolete inventory.

(ii) Debtors (Accounts Receivable) Turnover Ratio:

The ratio indicates the speed with which money is collected from the debtor. It is computed as follows:

$$\text{Debtors Turnover Ratio} = \frac{\text{Net Credit Sales}}{\text{Average Accounts Receivable}}$$

Or

$$\text{Debtors Turnover Ratio} = \frac{\text{Net Credit Sales}}{\text{Average Accounts Receivable}}$$

The term average account receivable includes trade debtors and bills receivable. Average accounts receivables are computed by taking the average receivables in the beginning and at the end of the accounting year.

Debtors' turnover ratio is used to measure how rapidly receivables are collected. The higher the ratio, better it is. A high ratio indicates that debts are collected rapidly. The formula for computation of debtors collection period is as follows:

$$\text{Debtors Collection Period (in month)} = \frac{\text{12 Months}}{\text{Debtors Turnover Ratio}}$$

For example, if the credit sales are ₹ 80,000, average accounts receivable ₹ 20,000, the debtors' turnover ratio and debt collection period will be computed as follows:

$$\text{Debtors Turnover Ratio} = \frac{\text{Net Credit Sales}}{\text{Average Accounts Receivable}}$$

$$= \frac{80,000}{20,000}$$

= 4 (times per year)

= 3 months

$$\text{Debtors Collection Period} = \frac{12 \text{ Months}}{\text{Debtors Turnover Ratio}}$$

$$= \frac{12 \text{ months}}{4 \text{ months}}$$

= 3 months

This means on an average three months credit is allowed to the debtor. An increase in the credit period would result in unnecessary blockage of funds and with increased possibility of losing money due to debts becoming bad.

Significance: Debtors turnover ratio or debt collection period ratio measures the quality of debtors since it indicates the speed with which money is collected from the debtor. A shorter collection period implies prompt payment by debtor. A longer collection period implies too liberal and inefficient credit collection performance. The credit policy should neither be too liberal nor too restrictive. The former will result in more blockage of funds and bad debts while the latter will cause lower sales which will reduce profits.

For example, the credit sales of a firm in a year amount to ₹ 12,00,000. The outstanding amount of debtors at the beginning and end of the year were ₹ 1,40,000 and ₹ 1,60,000 respectively.

$$\text{Debtors turnover ratio} = \frac{₹\ 12,00,000}{(₹\ 1,40,000 + 1,60,000)/2} = 8 \text{ (times per year)}$$

$$\text{The average collection period} = \frac{12 \text{ months}}{8} = 1.5 \text{ months}$$

(iii) Creditors (Accounts Payable) Turnover Ratio:

This is similar to Debtors Turnover Ratio. It indicates the speed with which payments for credit purchases are made to creditors. It can be computed as follows:

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

The term 'accounts payable' include trade creditors and bills payable.

With the help of the creditors' turnover ratio, creditors payment period can be computed as follows:

$$\text{Creditors Payment Period (in month)} = \frac{12 \text{ Months}}{\text{Creditors Turnover Ratio}}$$

For example, if the credit purchases during a year are ₹ 1,00,000, Average accounts payable ₹ 25,000, the creditors' turnover ratio and Creditor's collection period will be computed as follows:

$$\text{Creditors Turnover Period} = \frac{\text{Net Credit Purchases}}{\text{Average Accounts Receivable}}$$

$$= \frac{₹\ 1,00,000}{₹\ 25,000}$$

= 4 (times per year)

$$\text{Creditors Payment Period} = \frac{12 \text{ Months}}{\text{Creditors Turnover Ratio}}$$

$$= \frac{12 \text{ months}}{4}$$

$$= 3 \text{ months}$$

Significance: The creditors turnover ratio and the creditors payment period indicate about the promptness or otherwise in making payment for credit purchases. A higher creditors turnover ratio or a lower creditors payment period signifies that the creditors are being paid promptly thus enhancing the credit-worthiness of the company. However, a very favourable ratio to this effect also shows that the business is not taking full advantage of credit facilities which can be allowed by the creditors.

(iv) Fixed Assets Turnover Ratio:

The ratio indicates the extent to which the investment in fixed assets has contributed towards sales. The ratio can be calculated as follows:

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

Significance: The comparison of fixed assets turnover ratio over a period of time indicates whether the investment in fixed assets has been judicious or not. Of course, investment in fixed assets does not pushup sales immediately but the trend of increasing sales should be visible. If such trend is not visible or increase in sales has not been achieved after the expiry of a reasonable time it can be very well said that increased investments in fixed assets has not been judicious.

(v) Total Assets Turnover Ratio:

Some analysts prefer to calculate total assets turnover ratio.

$$\text{Net Assets Turnover Ratio} = \frac{\text{Net Sales}}{\text{Total Assets}}$$

(vi) Working Capital Turnover Ratio:

Working capital turnover ratio is a formula that calculates how efficiently a company uses working capital to generate sales. In this formula, working capital refers to the operating capital that a company uses in day-to-day operations. This ratio demonstrates a company's ability to use its working capital to generate income.

This formula may also be referred to as net sales to working capital.

$$\text{Working Capital Turnover Ratio} = \frac{\text{Net Annual Sales}}{\text{Working Capital}}$$

For example, if a company's sales is ₹ 10,00,000 in sales for a calendar year and ₹ 2,00,000 is working capital, then its working capital turnover ratio would be ₹ 5. This means that every rupee of working capital produces ₹ 5 in revenue.

C. Solvency Ratios

Solvency Ratios indicate about the financial position of the company. A company is considered to be financially sound if it is in a position to carry on its business smoothly and meet all its obligations both short-term and longterm without strain. The Financial or Solvency Ratios can therefore be classified into following categories:

(i) Long-term Solvency Ratios, which include fixed assets ratio, debt equity ratio and proprietary ratio;

(ii) Short-term Solvency Ratios, which include current ratio, liquidity ratio, super-quick ratio and defensive interval ratio & debt service coverage ratio.

Each of these ratios are now being discussed in detail-

(1) Long-term Solvency Ratios

(i) Debt-Equity Ratio:

The ratio is determined to ascertain the proportion between the 'outsiders' 'funds and share-holders funds' in the capital structure of an enterprise. The term outsiders' funds are generally used to represent total longterm debt. The ratio can be computed as follows:

$$\text{Debt} - \text{Equity Ratio} = \frac{\text{Total Long-term Debt}}{\text{Shareholders' Funds}}$$

Another approach to the calculation of the debt-equity ratio is to relate the total debt (not merely long-term debt) to the shareholders' equity. That is,

In such a case the ratio will be computed as follows:

$$= \frac{\text{Total Debt}}{\text{Shareholders' Funds}}$$

The ratio is considered to be ideal if the shareholders' funds are equal to total long-term debt. However, these days the ratio is also acceptable if the total long-term debt does not exceed twice of shareholders' funds.

Significance: The ratio is an indication of the soundness of the long-term financial policies pursued by the business enterprise. The excessive dependence on outsiders' funds may cause insolvency of the business. The ratio provides the margin of safety to the creditor. It tells the owners the extent to which they can gain by maintaining control with a limited investment.

(ii) Proprietary Ratio:

It is a variant of Debt-Equity Ratio. It establishes relationship between the proprietors' or shareholders' funds and the total tangible assets. It may be expressed as follows:

$$\text{Properietary Ratio} = \frac{\text{Shareholders' Funds}}{\text{Total Tangible Assets}}$$

Significance: The ratio focuses attention on the general financial strength of the business enterprise. The ratio is of particular importance to the creditors who can find out the proportion of shareholders' funds in the total assets employed in the business. A high proprietary ratio will indicate a relatively little danger to the creditors or vise-versa in the event of forced reorganization or winding up of the company.

(iii) Capital Gearing Ratio:

This ratio is a useful tool to analyze the capital structure of a company and is computed by dividing the common stockholders' equity by fixed interest or dividend bearing funds. Analyzing capital structure means measuring the relationship between the funds provided by common stockholders and the funds provided by those who receive a periodic interest or dividend at a fixed rate. A company is said to be low geared if the larger portion of the capital is composed of common stockholders' equity. On the other hand, the company is said to be highly geared if the larger portion of the capital is composed of fixed interest/dividend bearing funds.

Capital gearing refers to a company's relative leverage, i.e., its debt versus its equity value.

To calculate the capital gearing ratio, use the following formula:

$$\text{Capital Gearing Ratio} = \frac{\text{Common Stockholders' Equity}}{\text{Fixed Cost bearing Funds}}$$

For example, the following information has been taken from the Balance Sheet of L&T Limited.

8% bonds payable: ₹ 8,00,000

12% preferred stock: ₹ 7,00,000

Common stockholders' equity: ₹ 2,000,000

Required: Calculate the company's capital gearing ratio.

Solution:

$$\text{Capital Gearing Ratio} = \frac{\text{Common Stockholders' Equity}}{\text{Fixed Cost bearing Funds}}$$

$$= \frac{₹\ 20,00,000}{(₹\ 8,00,000 + ₹\ 7,00,000}$$

$$= \frac{₹\ 20,00,000}{(₹\ 15,00,000}$$

= 4 : 3 (low-geared)

(2) Short-term Solvency Ratios

(i) Current Ratio

The ratio is an indicator of the firm's commitment to meet its short-term liabilities. It is expressed as follows:

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

An ideal current ratio is 2:1. However, a ratio of 1.5:1 is also acceptable if the firm has adequate arrangements with its bankers to meet its short-term requirements of funds.

Significance: The ratio is an index of the concern's financial stability, since, it shows the extent to which the current assets exceed its current liabilities. A higher current ratio would indicate inadequate employment of funds, while a poor current ratio is a danger signal to the management.

(ii) Liquidity/Quick Ratio:

The ratio is also termed as Acid Test Ratio or Quick Ratio. The ratio is ascertained by comparing the liquid assets i.e., current assets (excluding stock and prepaid expenses) to current liabilities.

Some accountants prefer the term liquid liabilities for current liabilities. The term 'liquid liabilities' means liabilities payable within a short period. Bank overdraft and cash credit facilities (if they become permanent modes of financing) are excluded from current liabilities for this purpose. The ratio may be expressed as follows:

$$\text{Current Ratio} = \frac{\text{Liquid Assets}}{\text{Current Liabilities}}$$

An ideal liquidity ratio is '1:1'.

Significance: The ratio is an indicator of short-term solvency of the company. A comparison of the current ratio to quick ratio should also indicate the inventory hold-ups. For instance, if two units have the same current ratio but different liquidity ratios, it indicates over-stocking by the concern having low liquidity ratio as compared to the firm which has a higher liquidity ratio.

(iii) Fixed Charges Cover Ratio (FCCR):

The ratio indicates the number of times the fixed financial charges are covered by income before interest and tax. This ratio is calculated as follows:

$$\text{FCCR} = \frac{\text{Income before Interest and Tax}}{\text{Interest}}$$

Significance: The ratio is significant from the lender's point of view. It indicates whether the business would earn sufficient profits to pay periodically the interest charges. Higher the ratio, better it is.

(iv) Defensive-Interval Ratio (DIR)

This ratio denotes the liquidity of a firm in relation to its ability to meet projected daily expenditure from operations. It can be expressed as follows:

$$\text{Defensive Interval Ratio} = \frac{\text{Liquid Assets (Quick Assets)}}{\text{Daily Cash Requirements (Projected)}}$$

$$\text{Daily Cash Requirements (projected)} = \frac{\text{Projected Cash Operating Expenditure}}{\text{Number of Days in a Year}}$$

Significance: The DIR is thought by many people to be a better liquidity measure than the quick and current ratios. Because these ratios compare assets to liabilities rather than comparing assets to expenses, the DIR and current/quick ratios would give quite different results if the company had a lot of expenses, but no debt.

(v) Debt Service Coverage Ratio (DSCR)

This ratio indicates whether the business is earning sufficient profits to pay not only the interest charged, but also whether due of the principal amount. The ratio is calculated as follows:

$$\text{Debt Service Coverage Ratio} = \frac{\text{Profit after Taxes + Depreciation + Interest on Loan}}{\text{Interest on Loan + Loan Repayment in a Year}}$$

To service the loan in regard to timely payment of interest and repayment of loan installment. A ratio of 2 is considered satisfactory by the financial institutions the greater debt service coverage ratio indicates the better debt servicing capacity of the organization.

D. Valuation and Payout Ratios

Valuation ratios focus on the value of shareholders' investment in a company on the value of the firm. The value of shareholders' investment is reflected in the market capitalization which is equal to the market price per share multiplied by number of outstanding shares. The valuation ratios are as under:

(i) Price Earnings Ratio (P/E Ratio):

This ratio indicates the number of times the earning per share is covered by its market price. It is calculated as follows:

$$\text{P/E Ratio} = \frac{\text{Market Price Per Equity Share}}{\text{Earnings Per Share}}$$

For example, if the market price of an equity share is ₹ 20 and earnings per share is ₹ 5, the price earnings ratio will be 4 (i.e., 20 ÷ 5). This means for every one rupee of earning people are prepared to pay ₹4. In other words, the rate of return expected by the investors is 25% Significance. P/E Ratio helps the investors in deciding whether to buy or not to buy the shares of a company at a particular price. For Instance, in the example given, if the EPS falls to ₹ 3, the market price of the share should be ₹ 12 (i.e., 3 × 4). In case the market price of the share is ₹ 15, it will not be advisable to purchase the company's shares at that price.

(ii) Market Value to Book Value Share (MV/BV):

This ratio indicates the share price to book value per share.

$$\text{Market Value to Book Value Share Ratio} = \frac{\text{Market Value Per Share}}{\text{Book Value Per Share}}$$

(iii) Tobin's q:

Tobin's q is the ratio of the market value of a firm's assets (or equity and debt) to its assets' replacement costs.

$$\text{Tobin's q} = \frac{\text{Market Value of Assets}}{\text{Replacement Costs of Assets}}$$

(iv) Dividend Pay-Out Ratio:

The ratio indicates what proportion of earning per share has been used for paying dividend. It can be calculated as follows:

$$\text{Pay-Out Ratio} = \frac{\text{Dividend per Equity Share}}{\text{Earnings per Equity Share}}$$

The lower the pay-out ratio, the higher will be the amount of earnings ploughed back in the business. A lower pay-out ratio means a stronger financial position of the company.

(v) Dividend Yield Ratio (DYR):

The ratio is calculated by comparing the rate of dividend per share with its market value. It is calculated as follows:

$$\text{DYR} = \frac{\text{Dividend per Share}}{\text{Market Price per Share}} \times 100$$

Significance: The ratio helps an intending investor in knowing the effective return he is going to get on his investment.

For example, if the market price of a share is ₹ 25, paid-up value is ₹ 10 and dividend rate is 20%. The dividend yield ratio is 8% (i.e., 100 × 2/25). The intending investor can now decide whether it will be advisable for him to go for purchasing the shares of the company or not at the price prevailing in the market.

Ratios in Different Industries:

1. **Ratios used in Hotel Industry:** The variety of ratios used by hotel industry which are:
   (i) Room Occupancy Ratio
   (ii) Bed Occupancy Ratio
   (iii) Double Occupancy Ratio
   (iv) Seat Occupancy Ratios etc.

2. **Ratios used in Transport Industry:** The following important ratios are used in transport industry:
   (i) Passenger Kilometers
   (ii) Seat occupancy Ratios
   (iii) Operating cost per kilometer
3. **Bank Industry:** The following important ratios are used in Bank Industry:
   (i) Operating expenses ratios for various periods
   (ii) Loans to deposits ratios
   (iii) Operating income ratios for various periods
4. **Telecom Industry:** The following important ratios are used in telecom Industry.
   (i) Average duration of the outgoing call
   (ii) Number of outgoing calls per connection
   (iii) Revenue per customer

Illustration 7

Following is the Profit and Loss Account and Balance Sheet of Jai Hind Ltd. Redraft them for the purpose of analysis and calculate the following ratios: (1) Gross Profit Ratio (2) Overall Profitability Ratio (3) Current Ratio (4) Debt-Equity Ratio (5) Stock-Turnover Ratio (6) Finished Goods Turnover Ratio (7) Liquidity Ratio.

Dr. **Profit and Loss A/C for the year ended 31st March, 2024** **Cr.**

Particulars	Amount (₹)	Particulars	Amount (₹)
Opening stock of finished goods	1,00,000	Sales	10,00,000
Opening stock of raw material	50,000	Closing stock of raw material	1,50,000
Purchase of raw material	3,00,000	Closing stock of finished goods	1,00,000
Direct wages	2,00,000	Profit on sale of shares	50,000
Manufacturing expenses	1,00,000		
Administration expenses	50,000		
Selling & distribution expenses	50,000		
Loss on sale of plant	55,000		
Interest on debentures	10,000		
Net Profit	3,85,000		
Total	**13,00,000**	**Total**	**13,00,000**

Balance Sheet as on 31.3.2024

Liabilities	Amount (₹)	Assets	Amount (₹.)
Equity share capital	1,00,000	Fixed assets	2,50,000
Preference share capital	1,00,000	Stock of raw material	1,50,000
Reserves	1,00,000	Stock of finished goods	1,00,000

Debentures	2,00,000	Bank balance	50,000
Sundry creditors	1,00,000	Debtors	1,00,000
Bills payable	50,000		
Total	**6,50,000**	**Total**	**6,50,000**

Jai Hind Ltd.

Income Statement for the year ended 31st March, 2024

Particulars	Amount (₹)	Amount (₹)
Sales		1,000,000
(-) Cost of goods sold:		
Raw material consumed	2,00,000	
Wages	2,00,000	
Manufacturing expenses	1,00,000	
Cost of production	5,00,000	
(+) Opening stock of finished goods	1,00,000	
(-) Closing stock of finished goods	(1,00,000)	(5,00,000)
Gross profit		5,00,000
(-) Operating expenses:		
Administrative expenses	50,000	
Selling and distribution	50,000	(1,00,000)
Operating profit		4,00,000
(+) Non operating income (profit on sale of shares)		50,000
(-) Loss on sale of plant		(55,000)
EBIT		3,95,000
(-) Interest		(10,000)
EBT / Net Profit		3,85,000

Statement of Financial Position

Particulars	(₹)
Bank	50,000
Debtors	1,00,000
Liquid assets	1,50,000
(+) Stock (Raw Materials and Furnished Goods)	2,50,000
Current assets	4,00,000
(–) Current liabilities (Sundry Creditors and Bills Payable)	(1,50,000)
Working capital	2,50,000
(+) Fixed assets	2,50,000

Capital employed in business	5,00,000
(–) External liabilities	(2,00,000)
Shareholders' funds	3,00,000
(–) Preference share capital	(1,00,000)
Equity share capital	**2,00,000**
Represented by	
Equity share capital	1,00,000
(+) Reserves	1,00,000
	2,00,000

(1) Gross Profit Ratio = $\frac{\text{Gross Profit}}{\text{Sales}} \times 100$ $\frac{₹5,00,000}{₹10,00,000} \times 100 = 50\%$

(2) Overall Profitability Ratio = $\frac{\text{Operating Profit}}{\text{Capital Employed}} \times 100$ $\frac{₹4,00,000}{₹5,00,000} \times 100 = 80\%$

(3) Current Ratio = $\frac{\text{Current Assets}}{\text{Current Liabilities}} = \frac{₹4,00,000}{₹1,50,000} = 2.67$ times

(4) Debt Equity Ratio = $\frac{\text{Long-term Debt}}{\text{Long-term Fund}} = \frac{₹2,00,000}{₹5,00,000} = 0.4$ times

(5) Stock Turnover Ratio = $\frac{\text{Raw Materials Consumed}}{\text{Average Stock of Raw Material}} = \frac{₹2,00,000}{₹1,00,000} = 2$ times

[Average Stock of Raw Materials = $\frac{₹50,000 + ₹1,50,000}{2} = ₹1,00,000$]

(6) Finished Goods Turnover Ratio = $\frac{\text{Cost of goods sold}}{\text{Average stock of Raw Material}} = \frac{₹5,00,000}{₹1,00,000} = 5$ times

[Average Stock of Raw Materials = $\frac{₹1,00,000 + ₹1,00,000}{2} = ₹1,00,000$]

(7) Liquid Ratio = $\frac{\text{Liquid Assets}}{\text{Current Liabilities}} = \frac{₹1,50,000}{₹1,50,000} = 1$

[Liquid Asset: Bank Balance + Debtors = ₹ 50,000 + ₹ 1,00,000 = ₹ 1,50,000]

Illustration 8

The capital of A Ltd. is as follows:

10% Preference shares, ₹ 10 each	₹ 3,00,000
Equity shares of ₹ 10 each	₹ 8,00,000
Total	**₹ 11,00,000**

Additional information: Profit (after tax at 35%), ₹ 2,70,000; Depreciation, ₹ 60,000; Equity dividend paid 20%; Market price of equity shares, ₹ 50.

You are required to compute the following, showing the necessary workings: (a) Dividend yield on the equity shares (b) Cover for the preference and equity dividends (c) Earnings per shares and (d) Price-earnings ratio.

Solution:

(a) Dividend yield on the equity shares $= \frac{\text{Dividend per share}}{\text{Market price per share}} \times 100$

$= \frac{₹2\ (0.20 \times ₹10)}{\text{Market price per share}} \times 100$

$= 4\%$

(b) Dividend Coverage Ratio :

(i) Preference $= \frac{\text{Profit after taxes}}{\text{Dividend payable to preference Shareholders}} \times 100$

$= \frac{₹2,70,000}{₹30,000\ (0.10 \text{ of } ₹3,00,000)} = 9 \text{ times}$

(ii) Equity $= \frac{\text{Profit after taxes - Preference shares dividend}}{\text{Dividend payable to equity shareholders at current rate of ₹ 2 per share}}$

$= \frac{₹2,70,000 - ₹30,000}{₹1,60,000\ (80,000 \text{ shares } ₹2)} = 152 \text{ times}$

(c) Earnings per Equity Share $= \frac{\text{Earning available to equity shareholders}}{\text{Number of equity shares outstanding}} = \frac{₹2,40,000}{80,000} = ₹3 \text{ per share}$

(d) Price-earnings (P/E) Ratio $= \frac{\text{Market price per share}}{\text{Earnings per share}} = \frac{₹50}{₹3} = 16.67 \text{ times}$

Illustration 9

The following are the ratios relating to the activities of X Ltd.

Debtors' velocity (months)	3
Stock velocity (months)	8
Creditors' velocity (months)	2
Gross profit ratio (%)	25

Gross profit for the current year ended December, 31st, 2024 amounts to ₹ 4,00,000. Closing stock of the year is ₹ 10,000 above the opening stock. Bills receivables amount to ₹ 25,000 and bills payable to ₹ 10,000. Find out (a) Sales, (b) Closing Stock, and (c) Sundry Creditors.

Solution:

(a) Determination of sales:

$$\text{Sales} = \frac{₹4,00,000}{25} \times 100 = ₹\ 16,00,000$$

(b) Determination of sundry debtors:

Debtors' velocity is 3 months. In other words, debtors collection period is 3 months, or debtors' turnover ratio is 4. Assuming all sales to be credit sales and debtors' turnover ratio being calculated on the basis of year-end figures.

$$\text{Debtors' turnover ratio} = \frac{\text{Credit Sales}}{\text{Closing Debtors' + Bills Receivables}}$$

$$\text{Closing debtors' + Bills Receivables} = \frac{\text{Credit Sales}}{\text{Debtors' Turnover ratio}} = \frac{₹\ 16,00,000}{4} = ₹\ 4,00,000$$

Closing Debtors = ₹ 4,00,000 – ₹ 25,000 = ₹ 3,75,000

(c) Determination of Closing Stock:

Stock velocity of 8 months signifies that the inventory holding period is 8 months, stock turnover ratio is 1.5 i.e., (12 months / 8).

$$\text{Stock Turnover} = \frac{\text{Cost of Goods Sold (Sales – Gross Profit)}}{\text{Average Stock}} = \frac{₹\ 12,00,000}{\text{Average Stock}} = 1.5$$

$$\text{Average Stock} = \frac{₹\ 12,00,000}{1.5} = ₹\ 8,00,000$$

Closing Stock – Opening Stock = ₹ 10,000 ..... (i)

$$\frac{\text{Closing Stock + Opening Stock}}{2} = ₹8,00,000 \text{ ..... (ii)}$$

Closing Stock + Opening Stock = ₹ 16,00,000 ..... (iii)

Subtracting (i) from (iii) we have,

2 Opening Stock = ₹15,90,000

Opening Stock = ₹7,95,000

Therefore, Closing Stock = ₹8,05,000

(d) Determination of Sundry Creditors':

Creditors' velocity of 2 months signifies that the credit payment period is 2 months. In other words, creditors' turnover ratio is 6 (i.e., 12 months/2). Assuming all purchases to be credit purchases and creditors turnover is based on year- end figures.

$$\text{Creditors Turnover Ratio} = \frac{\text{Credit purchase}}{\text{Creditors + Bills payable}}$$

$$6 = \frac{₹\ 12,00,000}{\text{Creditors} + ₹\ 10,000}$$

$$\text{or, Creditors} + ₹\ 10,000 = \frac{₹\ 12,00,000}{6}$$

or, Creditors = ₹ 2,01,667 – ₹ 10,000

Therefore, Creditors = ₹1,91,667

Credit purchases are calculated as follows:

Cost of Goods Sold = Opening Stock + Purchases + Closing Stock

or, ₹ 12,00,000 = ₹ 7,95, 000 + Purchases – ₹ 8,05,000

or, ₹ 12,00,000 + ₹ 10,000 = Purchases

or, ₹ 12,10,000 = Purchases (credit)

3.2.2 Financial Scores

1. Altman's Z Score

In 1968, Edward I. Altman developed a Multivariate Model of Corporate Distress Prediction on the basis of Multiple Discriminant Analysis (MDA). He selected 33 failed and 33 non-failed firms, of which 22 Accounting and Non-accounting Ratios, which had been deemed to be the predictors of Corporate Distress, were taken into consideration. Of the 22 Accounting Ratios, he selected 5 ratios which had been deemed as the best predictors of Corporate Distress Prediction.

The purposes of these five selected ratios are as follows:

- To measure liquidity position of the firms.
- To measure reinvestment of earnings of the firms.
- To measure profitability of the firms.
- To measure financial leverage condition of the firms.
- To measure sales-generating ability of firm's Assets.

Hence, the Model is:

$Z = 1.2X_1 + 1.4X_2 + 3.3X_3 + 0.6X_4 + 1.0X_5$

Where,

Z = Overall Index of Multiple Index Function

X_1 = Working Capital / Total Assets. It measures liquid assets in relation to the size of the company.

X_2 = Retained Earnings / Total Assets. It measures profitability that reflects the company's age and earning power.

X_3 = Earnings before Interest and Taxes / Total Assets. It measures operating efficiency apart from tax and leveraging factors. It recognizes operating earnings as being important to long-term viability.

X_4 = Market Value of Equity / Book Value of Total Liabilities. It adds market dimension that can show up security price fluctuation as a possible red flag.

X_5 = Sales / Total Assets. Standard measure for total asset turnover (varies greatly from industry to industry).

Analysis of Value of Z-score

(i) If the calculated value of Z-score is greater than 2.99, it is predicted that the firm belongs to non-bankrupt class (i.e., non-failed firm).

(ii) If the calculated value of Z-score is smaller than 1.81, it is predicted that the firm belongs to bankrupt class (i.e., failed firm).

(iii) If the calculated value of Z-score of a firm falls between 1.81 and 2.99 (referred to as Grey Area), it is predicted that the firm consists of both bankrupt and non-bankrupt class (i.e., mixture of failed and nonfailed elements) and, therefore, requires further investigation to determine its solvency status.

As per Altman's Multivariate Model of Distress Prediction

(a) If $Z > 2.99$: Non-failed or non-distressed firm

(b) If $Z < 1.81$: Failed or distressed firm

(c) If $Z \geq 1.81$ but ≤ 2.99 : Mixture of failed and non-failed elements which requires further investigation to determine its solvency status.

In 1983, Altman developed a revised Z-score model for privately held firms. "Credit analysis, private placement dealers, accounting auditors, and firms themselves are concerned that the original model is only applicable to publicly traded entities (since X requires stock price data)". The revised Z-scores substitute the book value of equity for the market value in X.

The new Z-score model ratios are listed below:

X_1 = Working Capital / Total Assets

X_2 = Retained Earnings / Total Assets

X_3 = Earnings before Interest and Taxes / Total Assets

X_4 = Market Value of Equity / Total Liabilities

X_5 = Sales / Total Assets

A change in the weight factor is also calculated. The revised Z-Score formula follows:

$Z = 0.717(X_1) + 0.847(X_2) + 3.107(X_3) + 0.420(X_4) + 0.998(X_5)$

Zones of Discrimination:

$Z > 2.9$	"Safe" Zone
$1.23 < Z < 2.9$	"Grey" Zone
$Z < 1.23$	"Distress" Zone

Z-score estimated for manufacturers, industrials, non-manufacturers & emerging markets:

X_1 = (Current Assets – Current Liabilities) / Total Assets

X_2 = Retained Earnings / Total Assets

X_3 = Earnings before Interest and Taxes / Total Assets

X_4 = Book Value of Equity / Total Liabilities

Z-Score bankruptcy model:

$Z = 6.56X_1 + 3.26X_2 + 6.72X_3 + 1.05X_4$

Zones of discriminations:

$Z > 2.60$	"Safe" Zone
$1.1 < Z < 2.60$	"Grey" Zone
$Z < 1.1$	"Distress" Zone

Illustration: 10

From the information given below relating to Bad Past Ltd., calculate Altman's Z-score and comment:

(i)	Working Capital to Total Assets	= 25%
(ii)	Retained Earnings to Total Assets	= 30%
(iii)	EBIT to Total Assets	= 15%
(iv)	Market Value of Equity Shares to Book Value of Total Debt	= 150%
(v)	Sales to Total Assets	= 2 times

Solution:

As per Altman's Model (1968) of Corporate Distress Prediction:

$Z = 1.2\ X_1 + 1.4\ X_2 + 3.3\ X_3 + 0.6\ X_4 + 1.0\ X_5$

Here, the five variables are as follows:

X_1 = Working Capital to Total Assets = 25%

X_2 = Retained Earnings to Total Assets = 30%

X_3 = EBIT to Total Assets = 15%

X_4 = Market Value of Equity Shares to Book Value of Total Debt =150%

X_5 = Sales to Total Assets = 2 times

Hence, Z-score $= (1.2 \times 25\%) + (1.4 \times 30\%) + (3.3 \times 15\%) + (0.6 \times 150\%) + (1 \times 2.00)$

$= 0.30 + 0.42 + 0.495 + 0.90 + 2.00$

$= 4.115$

Comment: As the calculated value of Z-score is much higher than 2.99, it can be strongly predicted that the company is a non-bankrupt company.

2. Beneish M Score

In 1999, Messod D. Beneish developed a mathematical model that uses financial ratios and eight variables to identify whether a company has manipulated its earnings[1]. Beneish M Score helps to uncover companies who are likely to be manipulating their reported earnings. Companies with a higher score are more likely to be manipulators.

He also found that companies are incentivised to manipulate profits if they have high sales growth, deteriorating gross margins, rising operating expenses and rising leverage. They are likely to manipulate profits by accelerating sales recognition, increasing cost deferrals, raising accruals and reducing depreciation.

1 Beneish Messod D. (1999), The Detection of Earnings Manipulation, Financial Analysts Journal, Vol. 55, No. 5 (Sep. - Oct., 1999), pp. 24-36.

These eight ratios or variables are discussed below:

1. **Days' Sales in Receivables Index (DSRI):** A large increase in receivable days might suggest accelerated revenue recognition to inflate profits.

   DSRI = (Net Receivables$_t$ / Sales$_t$) / Net Receivables$_{t-1}$ / Sales$_{t-1}$)

2 **Gross Margin Index (GMI):** A deteriorating gross margin sends a negative signal about a firm's prospects and creates an incentive to inflate profits.

   GMI = [(Salest-1 - COGSt-1) / Salest-1] / [(Salest - COGSt) / Salest]

3. **Asset Quality Index (AQI):** An increase in long-term assets (for example, the capitalisation of costs), other than property plant and equipment, relative to total assets indicates that a firm has potentially increased its involvement in cost deferral to inflate profits.

   AQI = [1 - (Current Assetst + PP&Et + Securitiest) ÷ Total Assetst] / [1 - {(Current Assetst-1 + PP&Et-1 + $\frac{t}{t-1}$ × Securitiest-1) ÷ Total Assetst-1}]

4. **Sales Growth Index (SGI):** High sales growth does not imply manipulation but high growth companies are more likely to commit financial fraud because their financial position and capital needs put pressure on managers to achieve earnings targets. If growth firms face large stock prices losses at the first indication of a slowdown, they may have greater incentives to manipulate earnings.

   SGI = Salest / Salest-1

5. **Depreciation Index (DEPI):** A falling level of depreciation relative to net fixed assets raises the possibility that a firm has revised upwards the estimated useful life of assets, or adopted a new method that is income increasing.

   DEPI = (Depreciation$_{t-1}$/ (PP&E$_{t-1}$ + Depreciation$_{t-1}$)) / (Depreciation$_t$ / (PP&E$_t$ + Depreciation$_t$))

6. **Sales, General and Administrative Expenses (SGAI):** Analysts might interpret a disproportionate increase in SG&A relative to sales as a negative signal about a firm's future prospects, thereby creating an inventive to inflate profits.

   SGAI = (SG&A Expense$_t$ / Sales$_t$) / (SG&A Expense$_{t-1}$ / Sales$_{t-1}$)

7. **Leverage Index (LVGI):** Leverage is measured as total debt relative to total assets. An increase in leverage creates an incentive to manipulate profits in order to meet debt covenants.

   LVGI = [(Curren$_t$ Liabilities$_t$ + Total Long-term Debt$_t$) / Total Assets$_t$] / [(Curren$_t$ Liabilities$_{t-1}$ + Total Long-term Debt$_{t-1}$) / Total Assets$_{t-1}$]

8. **Total Accruals to Total Assets (TATA):** Total accruals are calculated as the change in working capital (other than cash) less depreciation relative to total assets. Accruals, or a portion thereof, reflect the extent to which managers make discretionary accounting choices to alter earnings. A higher level of accruals is, therefore, associated with a higher likelihood of profit manipulation.

   TATA = (Income from Continuing Operations$_t$ - Cash Flows from Operations$_t$) / Total Assets$_t$

Beneish M Score

Beneish M Score = −4.84 + 0.92 × DSRI + 0.528 × GMI + 0.404 × AQI + 0.892 × SGI + 0.115 × DEPI −0.172 × SGAI + 4.679 × TATA − 0.327 × LVGI

Interpretation:

(a) The threshold value is -1.78 for the model.

(b) If M-score is less than -1.78, the company is unlikely to be a manipulator. For example, an M-score value of -2.50 suggests a low likelihood of manipulation.

(c) If M-score is greater than −1.78, the company is likely to be a manipulator. For example, an M-score value of -1.50 suggests a high likelihood of manipulation.

Here are optimal cut-offs according to Beneish, presented as the score followed by the cost of Type I error relative to cost of Type II error):

M Score Table

Score	Relative Error Costs (Type I: Type II)
M Score > -1.49	(10:1)
M Score > -1.78	(20:1)
M Score > -1.89	(40+:1)

The best cut-off point depends on the costs mistakenly classifying in one of two ways:

(i) Classifying firm that is manipulating earnings as a non-manipulator (Type I error), and

(ii) Classifying a firm as a manipulator when it actually was not manipulating (Type II Error).

This model is used by students from Cornell University and detect Enron Corporation was correctly identified 1998 as an earnings manipulator using M-score.

Limitations of the Model

This is a probabilistic model, so it will not detect manipulators with 100% accuracy.

(i) Financial institutions were excluded from the sample in Beneish Model when calculating M-score. It means that the M-score for fraud detection cannot be applied among financial firms (banks, insurance).

(ii) Financial institutions were excluded from the sample in Beneish Model when calculating M-score. It means that the M-score for fraud detection cannot be applied among financial firms (banks, insurance).

3. Piotroski F Score

Joseph Piotroski, an accounting professor at the University of Chicago published a research paper on Value Investing: The Use of Historical Financial Statement Information to Separate Winners from Losers[2]. He examined whether a simple accounting-based fundamental analysis strategy, when applied to a broad portfolio of high bookto- market firms, can shift the distribution of returns earned by an investor. The strategy builds on investing in value stocks with strong financial performance. Piotroski (2000) documented for the US market between 1976 and 1996 that investors can increase the mean return with 7.5 % annually by investing in financially strong (high F-score) value stocks. Furthermore, he showed that an investment strategy that buys expected financially strong (high F-score) value stocks and short sell expected financially weak (low F-score) value stocks earn a return of 23 % annually.

The Piotroski F-score was first published in 2000. The F-score is a binary scoring system from 0 to 9 based on nine parameters/variables. The nine variables capture the factors profitability, leverage/liquidity and operating efficiency. Hence, a company can receive an F-score between 0 and 9 whereof 9 is the best score and is expected to have the strongest subsequent financial performance. For every criterion that are met, the company is given one

2 Piotroski Joseph D., (2000) Value Investing: The Use of Historical Financial Statement Information to Separate Winners from Losers, The University of Chicago Graduate School of Business

point, and if it is not met, then no points are awarded. The points are then added up to determine the best value stocks. Piotroski stated that the financial strength of a company could be determined using data solely from its financial statements. Moreover, a score of 0 is expected to have the weakest financial performance.

F -Score is based on nine signals which measure a stock's financial condition from three perspectives: profitability, financial leverage/liquidity and operating efficiency. A fundamental signal is classified as either good or bad whereof one is good and zero is bad.

A. Financial Performance Signals: Profitability

1. Return on Assets (ROA): (1 point if it is positive in the current year, 0 otherwise);
2. Operating Cash Flow (CFO) (1 point if it is positive in the current year, 0 otherwise);
3. Change in Return of Assets (ΔROA) (1 point if ROA is higher in the current year compared to the previous one, 0 otherwise);
4. Accruals (F_ ACCRUAL) (1 point if Operating Cash Flow/Total Assets is higher than ROA in the current year, 0 otherwise);

He defined ROA and CFO as net income before extraordinary items and cash flow from operations, respectively, scaled by beginning of the year total assets. If the firm's ROA (CFO) is positive, the indicator variable would be F_ROA (F_CFO) equal to one, zero otherwise. Further, ΔROA defined as the current year's ROA less the prior year's ROA. If ΔROA > 0, the indicator variable F_ ΔROA equals one, zero otherwise.

The variable ACCRUAL defined as current year's net income before extraordinary items less cash flow from operations, scaled by beginning of the year total assets. The indicator variable F_ ACCRUAL equals one if CFO > ROA, zero otherwise.

B. Financial Performance Signals: Leverage, Liquidity, and Source of Funds

1. Change in Leverage (ΔLEVER) (long-term) ratio (1 point if the ratio is lower this year compared to the previous one, 0 otherwise);
2. Change in Current ratio (ΔLIQUID) (1 point if it is higher in the current year compared to the previous one, 0 otherwise);
3. Change in the number of shares (EQ_OFFER) (1 point if no new shares were issued during the last year);

ΔLEVER defined as the historical change in the ratio of total long-term debt to average total assets, and view an increase (decrease) in financial leverage as a negative (positive) signal. The indicator variable defined F_ΔLEVER to equal one (zero) if the firm's leverage ratio fell (rose) in the year preceding portfolio formation.

The variable ΔLIQUID measures the historical change in the firm's current ratio between the current and prior year, an improvement in liquidity (i.e., ΔLIQUID > 0) is a good signal about the firm's ability to service current debt obligations. The indicator variable F_ΔLIQUID equals one if the firm's liquidity improved, zero otherwise.

The indicator variable defined EQ_OFFER to equal one if the firm did not issue common equity in the year preceding portfolio formation, zero otherwise.

C. Financial Performance Signals: Operating Efficiency

1. Change in Gross Margin (ΔMARGIN) (1 point if it is higher in the current year compared to the previous one, 0 otherwise);
2. Change in Asset Turnover ratio (ΔTURN) (1 point if it is higher in the current year compared to the previous one, 0 otherwise);

Financial Management and Business Data Analytics

ΔMARGIN defined as the firm's current gross margin ratio (gross margin scaled by total sales) less the prior year's gross margin ratio. An improvement in margins signifies a potential improvement in factor costs, a reduction in inventory costs, or a rise in the price of the firm's product. The indicator variable F_ΔMARGIN equals one if ΔMARGIN is positive, zero otherwise.

ΔTURN as the firm's current year asset turnover ratio (total sales scaled by beginning of the year total assets) less the prior year's asset turnover ratio.

Some adjustments that were done in calculation of the required financial ratios. The score is calculated based on the data from financial statement of a company. A company gets 1 point for each met criterion.

Summing up of all achieved points gives Piotroski F-score (number between 0 and 9).

Piotroski's Investment Strategy in Three Steps

Step 1: **Book-to-market** - Calculate book-to-market for all firms at fiscal year-end - Categorize values into quintiles.

Step 2: **F-score** - Calculate F-score for all firms in the highest quintile at fiscal year-end.

Step 3: **Investment** - Buy the firm 5 months after fiscal year-end. Sell 12 months after investment.

Interpretation

A company that has Piotroski F-score of 8–9 is considered to be strong. Alternatively, firms achieving the F-score of 0–2 are considered to be weak.

Average value of Piotroski F-score can be different in different branches of economy (e.g., manufacturing, finance, etc.). This should be taken into consideration when comparing companies with different specializations.

Fund Flow Statement - Preparation and Analysis

3.3

The Balance Sheet provides only a static view of the business. It is a statement of assets and liabilities on a particular date. It does not show the movement of funds. In business concerns, funds flow from different sources and similarly funds are invested in various sources of investment. It is a continuous process. The study and control of this funds flow process is one of the important objectives of Financial Management to assess the soundness and solvency of a business, financing and investing activities over the related period. Like the Balance Sheet, even the Profit and Loss Account does not depict the changes that have taken place in financial condition of a business concern between two dates. Hence, there is a need to prepare an additional statement to know the changes in assets, liabilities and owners' equity between dates of two Balance Sheets. Such a statement is called Funds Flow Statement or Statement of Sources and Uses of Funds or 'Where Got and Where Gone Statement'.

Definition of Fund Flow Statement

The Fund Flow Statement, which is also known as the Statement of Changes in financial position, is yet another tool of analysis of financial statements.

According to Foulke, "**A statement of sources and application of funds is a technical device designed to analyse the changes in the financial condition of a business enterprise between two dates**".

Anthony defines funds flow statement as "**Funds Flow Statement describes the sources from which additional funds were derived and the use to which these sources were put**".

So, Funds Flow Statement gives detailed analysis of changes in distribution of resources between two Balance Sheet dates. This statement is widely used by the financial analysts and credit granting institutions and Finance Managers in performing their jobs. Thus, Funds, Flow Statement, in general is able to present that information which either is not available or not readily apparent from an analysis of other financial statements.

Significance of Fund Flow Statement

It is very useful tool in the financial managers analytical kit. It provides a summary of management decisions on financing activities of the firm and investment policy. The following are the advantages of Fund Flow Statement.

(i) **Analysis of financial operations**: The fund flow statement reveals the net affect of various transactions on the operational and financial position of the business concern. It determines the financial consequences of business operations. This statement discloses the causes for changes in the assets and liabilities between two different points of time. It highlights the effect of these changes on the liquidity position of the company.

(ii) **Financial policies**: Fund flow Statement guides the management in formulating the financial policies such as dividend, reserve etc.

(iii) **Control device**: It serves as a measure of control to the management. If actual figures are compared with budgeted projected figures, management can take remedial action if there are my deviations.

(iv) **Evaluation of firm's financing:** Funds flow statement helps in evaluating the firm's financing. It shows how the funds were obtained from various sources and used in the past. Based on this, the financial manager can take corrective action.

(v) **Acts as a future guide:** Fund flow statement acts as a guide for future, to the management. It helps the management to know various problems it is going to face in near future for want of funds.

(vi) **Appraising the use of working capital**: Funds flow statement helps the management in knowing how effectively the working capital put into use.

(vii) **Reveals financial soundness**: Funds flow statement reveals the financial soundness of the business to the creditors, banks, financial institutions.

(viii) **Changes in working capital:** Funds flow statement highlights the changes in working capital. This helps the management in framing its investing policy.

(ix) **Assessing the degree of risk:** Funds flow statement helps the bankers, creditors, financial institutions in assessing the degree of risk involved in granting the credit to the business concern.

(x) **Net results:** This statement reveals the net results of operations during the year in terms of cash.

Limitations of Funds Flow Statement Analysis

It indicates only the past changes. It cannot reveal continuous changes.

(i) When both the aspects of the transaction are current, they are not considered.

(ii) When both the aspects of the transaction are non-current, even then they are not included in funds flow statement.

(iii) Some Management Accountants are of the opinion that this statement is not ideal tool for financial analysis.

(iv) Funds Flow Statement is historic in nature. Hence this projected fund flow statement cannot be prepared with much accuracy.

Preparation and Analysis of Fund Flow Statement

Two statements are involved in preparing and analysis of fund flow statement.

(I) Statement or Schedule of Changes in Working Capital

(II) Statement of Funds Flow

(I) Statement of Changes in Working Capital: This statement when prepared shows whether the working capital has increased or decreased during two balance sheet dates. But this does not give the reasons for increase or decrease in working capital. This statement is prepared by comparing the current assets and the current liabilities of two periods.

(II) Funds Flow Statement: Funds flow statement is also called as statement of changes in financial position or statement of sources and applications of funds or where got, where gone statement. The purpose of the funds flow statement is to provide information about the enterprise's investing and financing activities. The activities that the funds flow statement describes can be classified into two categories:

(i) Activities that generate funds, called Sources, and

(ii) Activities that involve spending of funds, called Uses or, Application

When the funds generated are more than funds used, we get an increase in working capital and when funds generated are lesser than the funds used, we get decrease in working capital. The increase or decrease in working capital disclosed by the schedule of changes in working capital should tally with the increase or decrease disclosed by the funds flow statement.

Sources and Uses or Application of Funds

In general, the assets of an enterprise represent the net uses of funds and its liabilities and net worth represent net sources of funds. The items of current assets and liabilities are not included in the sources and uses of funds. Sources and uses of funds are given below:

Sources of Funds

(i) Issue of share capital

(ii) Funds from business operations

(iii) Issue of debentures of long-term loans

(iv) Sale of fixed assets or long-term investments

(v) Non-trading income

(vi) Decrease in working capital

(vii) Any other increase in liability and decrease in asset

Application/Uses of Funds

(i) Redemption of preference share capital

(ii) Redemption of debentures

(iii) Repayment of long-term loans

(iv) Purchase of fixed assets or long-term investments

(v) Payment of dividends and tax

(vi) Any other non-trading payment

(vii) Funds lost through business operations

(viii) Increase in working capital

If the total of funds received exceeds that of the funds applied, the difference is excess funds, which will be represented by an increase in working capital. On the other hand, if the total of funds used exceeds the total of funds received, the difference is shortage in fund represented by decrease in working capital.

Illustration 11

From the Balance Sheet of X Ltd., prepare: (A) Statement of changes in the Working Capital and (B) Funds Flow Statement.

Balance Sheet

Liabilities	31st March		Assets	31st March	
	2023 (₹)	2024 (₹)		2023 (₹)	2024 (₹)
Equity Share Capital:	3,00,000	4,00,000	Goodwill	1,15,000	90,000
8% Preference share capital	1,50,000	1,00,000	Land & Buildings	2,00,000	1,70,000
P & L A/c	30,000	48,000	Plant	80,000	2,00,000

Liabilities	31st March		Assets	31st March	
	2023 (₹)	2024 (₹)		2023 (₹)	2024 (₹)
General Reserve	40,000	70,000	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**

Following is the additional information available.

(i) Depreciation of ₹ 10,000 and ₹ 20,000 have been charged on Plant and Land and Buildings respectively in 2024.

(ii) Interim dividend of ₹ 20,000 has been paid in 2024.

(iii) Income tax of ₹ 35,000 has been paid in 2024.

Solution:

A. Calculation of changes in Working Capital

Current Asset	2022 (₹)	2023 (₹)
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
A: Total Current Assets	**2,82,000**	**3,57,000**

Current Liabilities	2023	2024
Creditors	55,000	83,000
Bill Payable	20,000	16,000
B: Total Current Liabilities	75,000	99,000
Working capital (A-B)	2,07,000	2,58,000

Increase in working capital ₹ 2,58,000 – ₹ 2,07,000 = ₹ 51,000

Funds Flow Statement

Sources	Amount (₹)	Application	Amount (₹)
Funds from Operations	2,30,000	Purchases of Plant	1,30,000

Sources	Amount (₹)	Application	Amount (₹)
Sale proceeds of Land & Building	10,000	Increase in Working Capital	51,000
Issue of Equity Share Capital	1,00,000	Tax Paid	35,000
		Redemption of Preference Share Capital	50,000
		Proposed Dividend	42,000
		Interim Dividend paid	20,000
		Preference Dividend paid	12,000
	3,40,000		**3,40,000**

Working note:

Dr. **1. Land & Buildings A/c** **Cr.**

Particulars	Amount (₹)	Particulars	Amount (₹)
To, Balance b/d	2,00,000	By, Depreciation provided	20,000
		By, Bank – sale proceeds (b/f)	10,000
		By, Balance c/f	1,70,000
	2,00,000		**2,00,000**

Dr. **2. Plant A/c** **Cr.**

Particulars	Amount (₹)	Particulars	Amount (₹)
To, Balance b/d	80,000	By, Depreciation provided	10,000
To, Bank (b/f)	1,30,000	By, Balance c/f	2,00,000
	2,10,000		**2,10,000**

Dr. **3. Provision for Tax A/c** **Cr.**

Particulars	Amount (₹)	Particulars	Amount (₹)
To, Bank – paid	35,000	By, Balance b/d	40,000
To, Balance c/f	50,000	By, P & L A/c –provided	45,000
	85,000		**85,000**

Dr. **4. P/L Adjustment A/c** **Cr.**

Particulars	Amount (₹)	Particulars	Amount (₹)
To, Depreciation	30,000	By, Balance b/d	30,000
To, Preference Dividend (1,50,000 × 8%)	12,000		
To, Transfer to G/R	30,000		
To, Provision for Tax	45,000		
To, Proposed Dividend	50,000		

To, Goodwill written off	25,000		
To, Interim Dividend	20,000		
To, Balance C/f	48,000	By, Funds from Operation, (b/f)	2,30,000
	2,60,000		**2,60,000**

Illustration 12

The following is the Balance Sheet of Gama Limited for the year ending March 31, 2023 and March 31, 2024

Balance Sheet as on March, 31

Particulars	2023 (₹)	2024 (₹)
Capital and Liabilities		
Share Capital	6,75,000	7,87,500
General Reserves	2,25,000	2,81,250
Capital Reserve (Profit on Sale of Investment)	– 1,12,500	11,250
Profit & Loss Account	3,37,500	2,25,000
15% Debentures	11,250	2,25,000
Accrued Expenses	1,80,000	13,500
Creditors	33,750	2,81,250
Provision for Dividends	78,750	38,250
Provision for Taxation		85,500
Total	**16,53,750**	**19,48,500**

Assets		
Fixed Assets	11,25,000	13,50,000
Less: Accumulated depreciation	2,25,000	2,81,250
Net Fixed Assets	9,00,000	10,68,750
Long – Term Investments (at cost)	2,02,500	2,02,500
Stock (at cost)	2,25,000	3,03,750
Debtors (net of provision for doubtful debts of ₹ 45,000 and ₹ 56,250 respectively for 2023 and 2024 respectively)	2,53,125	2,75,625
Bills receivables	45,000	73,125
Prepaid Expenses	11,250	13,500
Miscellaneous Expenditure	16,875	11,250
Total	**16,53,750**	**19,48,500**

Additional Information:

(a) During the year 2023-24, fixed assets with a net book value of ₹ 11,250 (accumulated depreciation, ₹ 33,750) was sold for ₹ 9,000.

(b) During the year 2023-24, Investments costing ₹ 90,000 were sold, and also Investments costing ₹ 90,000 were purchased.

(c) Debentures were retired at a Premium of 10%.

(d) Tax of ₹ 61,875 was paid for 2022-23.

(e) During the year 2023-24, bad debts of ₹ 15,750 were written off against the provision for Doubtful Debt account.

(f) The proposed dividend for 2022-23 was paid in 2023-24.

Prepare a Funds Flow Statement (Statement of changes in Financial Position on working capital basis) for the year ended March 31, 2024.

Solution:

In the books of Gama Ltd.

Funds Flow Statement For the year ended March 31, 2024

Sources of Fund	Amount (₹)	Application of Funds	Amount (₹)
Increase in Share Capital	1,12,500	Debenture Redemption	1,12,500
Sale of Assets	9,000	Redemption Premium	11,250
Fund from Operations	3,84,750	Tax paid	61,875
Sale of Investment	1,01,250	Dividend paid	33,750
		Increase in Working Capital	28,125
		Purchase of Fixed Assets	2,70,000
		Purchase of Investment	90,000
	6,07,500		**6,07,500**

Working notes:

Statement showing Funds from Operations

Particulars	Amount (₹)	Amount (₹)
Net Profit [2,25,000 – 1,12,500]		1,12,500
Add: Transfer to General Reserve	56,250	
Loss on sale of fixed assets	2,250	
Premium on Redemption of Debentures	11,250	
Provision for Tax	68,625	
Provision for Dividend	38,250	
Depreciation	90,000	
Misc. Expenses. write off	5,625	2,72,250
Funds from Operations		**3,84,750**

Statement showing changes in Working Capital

Particulars	(₹)	
	2023	2024
Current Assets		
Stock	2,25,000	3,03,750
Debtors	2,53,125	2,75,625
Bills Receivables	45,000	73,125
Prepaid Expenses	11,250	13,500
Total Current Assets (A)	5,34,375	6,66,000
Current Liabilities		
Accrued Expenses	11,250	13,500
Creditors	1,80,000	2,81,250
Total Current Liabilities (B)	1,91,250	2,94,750
Working Capital (A) – (B)	3,43,125	3,71,250
Increase in Working Capital		28,125

Dr. **Provision for Doubtful Debt A/c** **Cr.**

Particulars	Amount (₹)	Particulars	Amount (₹)
To Bad debts	15,750	By Balance b/d	45,000
To Balance c/d	56,250	By P & L A/c	27,000
	72,000		**72,000**

Dr. **Provision for Dividends** **Cr.**

Particulars	Amount (₹)	Particulars	Amount (₹)
To Divend paid	33,750	By Balance b/d	33,750
To Balance c/d	38,250	By P & L A/c	38,250
	72,000		**72,000**

Dr. **Provision for Tax** **Cr.**

Particulars	Amount (₹)	Particulars	Amount (₹)
To Tax paid	61,875	By Balance B/d	78,750
To Balance c/d	85,500	By P & L A/c	68,625
	1,47,375		**1,47,375**

Dr. **Accumulated Depreciation A/c** **Cr.**

Particulars	Amount (₹)	Particulars	Amount (₹)
To Asset sold	33,750	By Balance b/d	2,25,000
To Balance c/d	2,81,250	By P & L A/c	90,000
	3,15,000		**3,15,000**

Dr. **Fixed Assets A/c** **Cr.**

Particulars	Amount (₹)	Particulars	Amount (₹)
To Balance b/d	11,25,000	By Account depreciation	33,750
To Bank	2,70,000	By Bank	9,000
		By P & L	2,250
		By Balance c/d	13,50,000
	13,95,000		**13,95,000**

Cash Flow Statement - Preparation and Analysis

3.4

Cash Flow Statement reveals the causes of changes in cash position of business concern between two dates of Balance Sheets. According to Ind AS-7 an enterprise should prepare a Cash Flow Statement and should present it for each period with financial statements prepared. Ind AS-7 has also given the meaning of the words cash, cash equivalent and cash flows.

(i) **Cash:** This includes cash on hand and demand deposits with banks.

(ii) **Cash equivalents:** This includes purely short-term and highly liquid investments which are readily convertible into cash and which are subject to an insignificant risk of changes in value. Therefore an investment normally qualifies as a cash equivalent only when it has a short maturity, of say three months or less.

(iii) **Cash flows:** This includes inflows and outflows of cash and cash equivalents. If the effect of transaction results in the increase of cash and its equivalents, it is called an inflow (source) and if it results in the decrease of total cash, it is known as outflow (use of cash).

3.4.1 Classification of Cash Flows

According to Ind AS-7 cash flows are classified into three main categories:

A. Cash flows from Operating Activities

B. Cash flows from Investing Activities

C. Cash flows from Financing Activities

A. Cash flows from Operating Activities: Operating activities are the principal revenue-producing activities of the enterprise and other activities that are not investing or financing activities.

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

Cash flows from operating activities are primarily derived from the principal revenue-producing activities of the enterprise. The following are the important operating activities:-

(i) Cash receipts from the sale of goods and the rendering of services.

(ii) Cash receipts from royalties, fees, commissions and other revenue.

(iii) Cash payments to suppliers for goods and services.

(iv) Cash payments to and on behalf of employees.

(v) Cash receipts and cash payments of an insurance enterprise for premiums and claims, annuities and other policy benefits

(vi) Cash payments or refunds of income taxes unless they can be specifically identified with financing and investing activities

(vii) Cash receipts and payments relating in future contracts, forward contracts, option contracts and swap contracts when the contracts are held for dealing or trading purposes.

(viii) Some transactions such as the sale of an item of plant, may give rise to a gain or loss which is included in the determination of net profit or loss. However, the cash flows relating to such transactions are cash flows from investing activities.

An enterprise may hold securities and loans for dealing or trading purposes, in which case they are similar to inventory acquired specifically for sale. Therefore, cash flows arising from the purchase and sale of dealing or trading activities are classified as operating activities. Similarly cash advances and loans made by financial enterprises are usually classified as operating activities since they relate by the main revenue producing activity of that enterprise.

B. Cash flows from Investing Activities: Investing activities are the acquisition and disposal of long-term assets and other investments not included in cash equivalents. The separate disclosure of cash flows arising from investing activities is important because the cash flows represent the extent to which expenditures have been made for resources intended to generate future income and cash flows.

Examples of cash flows arising from Investing Activities are:

(i) Cash payments to acquire fixed assets (including intangibles). These payments include those relating to capitalised research & development costs and self constructed fixed assets.

(ii) Cash receipts from disposal of fixed assets (including intangibles).

(iii) Cash payments to acquire shares, warrants, or debt instruments of other enterprises and interests in joint ventures.

(iv) Cash receipts from disposal of shares, warrants, or debt instruments of other enterprises and interests in joint venture.

(v) Cash advances and loans made to third parties (other than advances and loans made by a financial enterprise).

(vi) Cash receipts from the repayment of advances and loans made to third parties (other than advances and loans of a financial enterprise).

(vii) Cash payments for future contracts, forward contracts, option contracts, and swap contracts except when the contracts are held for dealing or trading purposes or the payments are classified as financing activities and

(viii) Cash receipts from future contracts, forward contracts, option contracts and swap contracts except when the contracts are held for dealing or trading purpose, or the receipts are classified as financing activities.

When a contract is accounted for as a hedge of an identifiable position, the cash flows of the contract are classified in the same manner as the cash flows of the position being hedged.

C. Cash flows from Financing Activities: Financing activities are activities that result in changes in the size and composition of the owners capital (including Preference Share Capital in the case of a company) and borrowing of the enterprise.

The separate disclosure of cash flows arising from financing activities is important because it is useful in predicting claims on future cash flows by providers of funds (both capital and borrowing) to the enterprise.

Examples of cash flows arising from financing activities are:

(i) Cash proceeds from issuing shares or other similar instruments.

(ii) Cash proceeds from issuing debentures loans, notes, bonds and other short-or long-term borrowings and

(iii) Cash repayments of amounts borrowed such as redemption of debentures, bonds, preference shares.

Treatment of some Typical Items: Ind AS-7 has also provided for the treatment of cash flows from some peculiar items as discussed below :

(a) Extraordinary Items: The cash flows associated with extraordinary items should be classified as arising from operating, investing or financing activities as appropriate and separately disclosed in the Cash Flows Statement to enable users to understand their nature and effect on the present and future cash flows of the enterprise.

(b) Interest and Dividends: Cash flows from interest and dividends received and paid should be disclosed separately. Further, the total amount of interest paid during the period should be disclosed in the Cash Flow Statement whether it has been recognised as an expense in the statement of profit and loss or capitalised. The treatment of interest and dividends received and paid depends upon the nature of the enterprise. For this purpose, the enterprises are classified as (i) Financial enterprises, and (ii) Other enterprises.

(i) **Financial Enterprises:** In the case of financial enterprises, cash flows arising from interest paid and interest and dividend received should be classified as cash flows arising from operating activities.

(ii) **Other Enterprises:** In the case of other enterprises, cash flows arising from interest paid should be classified as cash flows from financing activities while interest and dividends received should be classified as cash flows from investing activities. Dividends paid should be classified as cash flows from financing activities.

(c) Taxes on Income: Cash flows arising from taxes on income should be separately disclosed and should be classified as cash flows from operating activities unless they can be specifically identified with financing and investing activities.

(d) Acquisitions and Disposals of Subsidiaries and other Business Units : The aggregate cash flows arising from acquisitions and from disposals of subsidiaries or other business units should be presented separately and classified as investing activities. An enterprise should disclose, in aggregate in respect of both acquisition and disposal of subsidiaries or other business units during the period each of the following:

(i) The total purchase or disposal consideration and

(ii) The portion of the purchase or disposal consideration discharged by means of cash and cash equivalents.

The separate presentation of the cash flow effects of acquisitions and disposals of subsidiaries and other business units as single line items helps to distinguish those cash flows from other cash flows. The cash flow effects of disposals are not deducted from those of acquisitions.

(e) Foreign Currency Cash Flows: Cash flows arising from transactions in a foreign currency should be recorded in an enterprise's reporting currency by applying to the foreign currency amount the exchange rate between the reporting currency and the foreign currency at the date of the cash flow. The effect of changes in exchange rates on cash and cash equivalents held in a foreign currency should be reported as a separate part of the reconciliation of the changes in cash and cash equivalents during the period.

Unrealised gains and losses arising from changes in foreign exchange rates are not cash flows. However, the effect of exchange rate changes on cash and cash equivalents held or due in a foreign currency is reported in the Cash Flow Statement in order to reconcile cash and cash equivalents at the beginning and

at the end of the period. This amount is presented separately from cash flows from operating investing and financing activities and includes the difference, if any had those cash flows been reported at the end of period exchange rates.

(f) Non-cash Transactions: Many investing and financing activities do not have a direct impact on current cash flows although they do affect the capital and asset structure of an enterprise. Examples of non-cash transactions are :

(i) The acquisition of assets by assuming directly related activities.

(ii) The acquisition of an enterprise by means of issue of shares; and

(iii) The conversion of debt to equity.

Investing and financing transactions that do not require the use of cash or cash equivalents should be excluded from a Cash Flow Statement. Such transactions should be disclosed elsewhere in the financial statements in a way that provides all the relevant information about these investing and financing activities.

3.4.2 Methods of Calculating Cash flows (Used in) from Operating Activities

There are two methods of reporting cash flows from operating activities namely (1) Direct Method and (2) Indirect Method.

1. **The Direct Method:** Under the direct method, cash receipts (inflows) from operating revenues and cash payments (outflows) for operating expenses are calculated to arrive at cash flows from operating activities.

   The difference between the cash receipts and cash payments is the net cash flow provided by (or used in) operating activities. The following are the examples of cash receipts and cash payments (called cash flows) resulting from operating activities :

   (a) Cash receipts from the sale of goods and the rendering of services.

   (b) Cash receipts from royalties, fees commissions and other revenues.

   (c) Cash payment to suppliers for goods and services.

   (d) Cash payment to and on behalf of employees.

   (e) Cash receipts and cash payment of an insurance enterprise for premiums and claims annuities and other policy benefits.

   (f) Cash payments or refund of income taxes unless they can be specifically identified with financing and investing activities. and

   (g) Cash receipts and payments relating to future contracts, forward contracts, option contracts and swap contracts when the contracts are held for dealing or trading purposes. The formation about major classes of gross cash receipts and gross cash payments may be obtained either:

      (a) From accounting records of the enterprise; or

      (b) By adjusting sales, cost of sales (interest and similar income and interest expense and similar charges for a financial enterprise) and other items in the statement of profit and loss for;

         (i) Changes during the period in inventories and operating receivables and payables,

         (ii) Other non-cash items, and

         (iii) Other items for which the cash effects are investing or financing cash flows.

Format of Cash Flow Statement: Ind AS-7 has not provided any specific format for preparing a Cash Flows Statement. The Cash Flow Statement should report cash flows during the period classified by operating, investing and financing activities; a widely used format of Cash Flow Statement is given below:

Cash Flow Statement (for the year ended.)

Particulars	(₹)	(₹)
Cash Flows from Operating activities		
Cash receipts from customers	xxx	
Cash paid to suppliers and employees	(xxx)	
Cash generated from operations	xxx	
Income tax paid	(xx)	
Cash flow before extraordinary items	xxx	
Extraordinary items	xxx	
Net cash from (used in) Operating activities		xxx
(Or)		
Net profit before tax and extraordinary items	xxx	
Adjustments for non-cash and non-operating items		
(List of individual items such as depreciation, foreign exchange loss, loss on sale of fixed assets, interest income, dividend income, interest expense etc.)	xxx	
Operating profit before working capital changes	xxx	
Adjustments for changes in current assets and current liabilities		
(List of individual items)	xxx	
Cash generated from (used in) operations before tax	xxx	
Income tax paid	xxx	
Cash flow before extraordinary items	xxx	
Extraordinary items (such as refund of tax)	xxx	
Net Cash from (used in) Operating activities		xxx
Cash Flows from investing activities		
Individual items of cash inflows and outflows from financing activities	xxx	
(such as purchase/sale of fixed assets, purchase or sale of investments, interest received, dividend received etc.	xxx	
Net cash from (used in) investing activities		xxx
Cash Flows from Financing Activities		
Individual items of cash inflows and outflows from financing activities	xxx	
(such as) proceeds from issue of shares, long-term borrowings, repayments of long-term borrowings, interest paid, dividend paid etc.)	xxx	xxx

Particulars	(₹)	(₹)
Net increase (decrease) in cash and cash equivalents		xxx
Cash and cash equivalents at the beginning of the period		xxx
Cash and cash equivalents at the end of the period		xxx

2. **The Indirect Method:** Under the indirect method, the net cash flow from operating activities is determined by adjusting net profit or loss for the effect of :

   (a) Non-cash items such as depreciation, provisions, deferred taxes, and unrealised foreign exchange gains and losses;

   (b) Changes during the period in inventories and operating receivables and payables.

   (c) All other items for which the cash effects are investing or financing cash flows.

   The indirect method is also called reconciliation method as it involves reconciliation of net profit or loss as given in the Profit and Loss Account and the net cash flow from operating activities as shown in the Cash Flow Statement. In other words, net profit or losses adjusted for non-cash and non-operating items which may have been debited or credited to Profit and Loss Account as follows.

Calculation of Cash Flow from Operating Activities

Particulars	(₹)	(₹)
Net profit before tax and extraordinary items		xxx
Add : Non-cash and non-operating items which have already been debited to P.L. Account		
(a) Depreciation	xxx	
(b) Transfer to reserves and provisions	xxx	
(c) Goodwill written off	xxx	
(d) Preliminary expenses written off	xxx	
(e) Other intangible assets written off such as discount or loss on issue of shares / debentures, underwriting commission etc.	xxx	
(f) Loss on sale or disposal of fixed assets	xxx	
(g) Loss on sale of investments	xxx	
(h) Foreign exchange loss	xxx	xxx
Less : Non-cash and non-operating items which have already been credited to Profit and Loss Account		xxx
(a) Gain on sale of fixed assets	xxx	
(b) Profit on sale of investments	xxx	
(c) Income from interest or dividends on investments	xxx	
(d) Appreciation	xxx	

Particulars	(₹)	(₹)
(e) Reserves written back	xxx	
(f) Foreign exchange gain	xxx	xxx

Or

Particulars	(₹)	(₹)
		xxx
Operating Profit Before Working Capital Changes		
Adjustments for changes in current operating assets and liabilities:		
Add : Decrease in Accounts of Current Operating Assets (except cash and cash equivalents) such as :		
Decrease in trade debts	xxx	
Decrease in bills receivables	xxx	
Decrease in inventories / stock-in-trade	xxx	
Decrease in prepaid expenses etc.	xxx	
Add : Increase in accounts of current operating liabilities (except Bank overdraft) such as :		
Increase in creditors	xxx	
Increase in bills payable	xxx	
Increase in outstanding expenses	xxx	xxx
		xxxx
Less : Increase in accounts of current operating assets (as stated above)		xxx
		xxx
Less : Decrease in accounts of current operating liabilities (as stated above)		xxx
Cash generated from (used in) operations before tax		xxx
Less : Income tax paid		xxx
Cash flows before extraordinary items		xxx
Add / Less : Extraordinary items if any		xxx
Net cash flow from (used in) operating activities		xxx

Need of Preparing Cash Flow Statement

Cash flow statement shows the changes in cash position between two balance sheet dates. It provides the details in respect of cash generated through operating, investing and financial activities and utilised for operating, investing and financial activities. The transactions which increase the cash position of the business are known as Inflows

of cash (Example : Sale of current and fixed assets, Issue of shares and debentures etc.) The transactions which decrease the cash position are known as outflows (example : Purchase of Current and Fixed Assets, redemption of Debentures, and Preference Shares and other long-term debts). Cash Flow Statement concentrates on transactions that have a direct impact on cash. This statement depicts factors responsible for such inflow and outflow of cash.

(i) Cash flow statement reveals the causes of changes in cash balances between two balance sheet dates.

(ii) This statement helps the management to evaluate its ability to meet its obligations i.e., payment to creditors, the payment of bank loan, payment of interest, taxes, dividend etc.

(iii) It throws light on causes for poor liquidity in spite of good profits and excessive liquidity in spite of heavy losses.

(iv) It helps the management in understanding the past behaviour of cash cycle and in controlling the use of cash in future.

(v) Cash Flow Statements helps the management in planning repayment of loans, replacement of assets etc.

(vi) This statement is helpful in short-term financial decisions relating to liquidity.

(vii) This statement helps the management in preparing the cash budgets properly.

(viii) This statement helps the financial institution who lends advances to business concerns in estimating their repaying capacities.

(ix) Since a cash flow statement is based on the cash basis of accounting it is very useful in evaluation of cash position of a firm.

(x) Cash flow statement discloses the complete story of cash movement. The increase in, or decrease of cash and the reason therefore can be known.

(xi) Cash flow statement provides information of all activities such as operating, investing, and financing activities separately.

(xii) Since cash flow statement provides information regarding the sources and utilisation of cash during a particular period, it is easy for the management to plan carefully for the cash requirements in the future, for the purpose of redeeming long-term liabilities or / and replacing some fixed assets.

(xiii) A projected cash flow statement reveals the future cash position of a concern. Through this cash flow statement the firm can know how much cash it can generate and how much cash will be needed to make various payments.

(xiv) Cash flow statement prepared according to the Ind AS-7 is more suitable for making comparison than the funds flow statements as there is no standard formats used for the same.

Limitations of Cash Flow Statement

Cash flow statement suffers from the following limitations:

(i) A cash flow statement only reveals the inflow and outflow of cash. The cash balance disclosed by the Cash flow statement may not represent the real liquid position of the concern.

(ii) Cash flow statement is not suitable for judging the profitability of a firm as non-cash changes are ignored while calculating cash flows from operating activities.

(iii) Cash flow statement is not a substitute for income statement or funds flow statement. Each of them has a separate function to perform. Net cash flow disclosed by cash flow statement does not necessarily be the net income of the business, because net income is determined by taking into account both cash and noncash items.

(iv) Cash flow statement is based on cash accounting. It ignores the basic accounting concept of a accrual basis.

(v) Cash flow statement reveals the movement of cash only. In preparation, it ignores most liquid current assets (example: sundry debtors, bills receivable etc.)

(vi) It is difficult to precisely define the term cash. There are controversies among accountants over a number of near cash items like cheques, stamps, postal orders etc., to be included in cash.

(vii) Cash flow statement does not give a complete picture of financial position of the concern.

3.4.3 Differences between Funds Flow Statement and Cash Flow Statement

The following are the main differences between a Funds Flow Statement and a Cash Flow Statement:

Funds Flow Statement	Cash Flow Statement
1. Funds flow statement reveals the change in working capital between two Balance Sheet dates.	Cash flow statement reveals the changes in cash position between two balance sheet dates.
2. Funds flow statement is based on accounting.	Cash flow statement is based on cash basis of accounting
3. In the case of funds flow statement a schedule of changes in working capital is prepared.	No such schedule of changes in working capital is prepared for a cash flow statement.
4. Funds flow statement is useful in planning, Intermediate and long-term financing.	Cash flow statement as a tool of financial analysis is more useful for short-term analysis and cash planning.
5. Funds flow statement deals with all components of working capital.	Cash flow statement deals only with cash and cash equivalents.
6. Funds flow statement reveals the sources and application of funds. The difference represents net increase or decrease in working capital.	Cash flow statement is prepared by taking into consideration the inflows and outflows in terms of operating, investing and financing activities. The net difference represents the net increase or decrease in cash and cash equivalents.

Illustration 13

From the information contained in Income Statement and Balance Sheet of 'A' Ltd. prepare Cash flow statement.

Income Statement for the year ended March 31, 2024.

	(₹)
Net Sales (A)	2,52,00,000
Less: Cash cost of sales	1,98,00,000
Depreciation	6,00,000
Salaries and Wages	24,00,000
Operating Expenses	8,00,000
Provision for Taxation	8,80,000

	(₹)
(B)	2,44,80,000
Net Operating Profit (A – B)	7,20,000
Non-recurring Income – Profits on sale of equipment	1,20,000
	8,40,000
Retained earnings and Profits brought forward	15,18,000
	23,58,000
Dividends declared and paid during the year	7,20,000
Profit and Loss A/c balance as on March 31, 2024	16,38,000

Balance Sheet **(₹)**

Assets	March 31, 2023	March 31, 2024
Fixed Assets:		
Land	4,80,000	9,60,000
Buildings and Equipment	36,00,000	57,60,000
Current Assets:		
Cash	6,00,000	7,20,000
Debtors	16,80,000	18,60,000
Stock	26,40,000	9,60,000
Advances	78,000	90,000
	90,78,000	**1,03,50,000**

Liabilities and Equity **(₹)**

Share Capital	36,00,000	44,40,000
Surplus in Profit and Loss A/c	15,18,000	16,38,000
Sundry Creditors	24,00,000	23,40,000
Outstanding Expenses	2,40,000	4,80,000
Income – Tax payable	1,20,000	1,32,000
Accumulated Depreciation on Buildings and Equipment	12,00,000	13,20,000
	90,78,000	**1,03,50,000**

The original cost of equipment sold during the year 2023-24 was ₹ 7,20,000.

Solution :

Working Notes:

1. Cash receipt from customers: **(₹)**

Sales revenue	2,52,00,000
Add: Debtor at beginning	16,80,000
	2,68,80,000
Less: Debtors at the end	18,60,000
Total cash receipt from customers	2,50,20,000

2. Income tax paid: **(₹)**

Tax payable at beginning	1,20,000
Add: Provision for taxation	8,80,000
	10,00,000
Less: Tax payable at the end	1,32,000
Tax paid during the year	8,68,000

3. Cash paid to supplier and employees **(₹)**

Cost of goods sold		1,98,00,000
Add: Operating expenses		8,00,000
Add: Salary and wages		24,00,000
		2,30,00,000
Add: Creditor at the beginning	24,00,000	
Stock at the end	9,60,000	
Advance at the end	90,000	
Outstanding exp. at the beginning	2,40,000	36,90,000
		2,66,90,000
Less: Creditors at the end	23,40,000	
Stock at the beginning	26,40,000	
Advance at the beginning	78,000	
Outstanding expenses at the end	4,80,000	55,38,000
Total Cash Paid		**2,11,52,000**

4. Accumulated depreciation on equipment sold **(₹)**

Accumulated depreciation at beginning	12,00,000
Add: Depreciation for the year	6,00,000
	18,00,000
Less: Accumulated depreciation at the end	13,20,000
Accumulated depreciation on equipment sold	4,80,000

5. Sale price of equipment **(₹)**

Cost Price	7,20,000
Less: Accumulated depreciation	4,80,000
	2,40,000
Add: Profit on sale	1,20,000
Sale price	3,60,000

6. Purchase of building and equipments **(₹)**

Opening balance	36,00,000
Less: Cost of equipment sold	7,20,000
	28,80,000
Balance at end of the year	57,60,000
Purchase during the year	28,80,000

Cash Flow Statement of A Ltd. for the year ended 31st March 2024

		(₹)	(₹)
(A)	**Cash flow from Operating Activities:**		
	Cash receipts from customers	2,50,20,000	
	Less: Cash paid to supplier & employees	2,11,52,000	
	Cash generated from operations	38,68,000	
	Less: Income tax paid	(8,68,000)	
	Net cash from operating activities		30,00,000
(B)	**Cash flow from Investing Activities:**		
	Purchase of land	(4,80,000)	
	Purchase of building & equipment	(28,80,000)	
	Sale of equipment	3,60,000	
	Net cash used in financing activities		(30,00,000)
(C)	**Cash flow from Financing Activities:**		
	Issue of share capital	8,40,000	
	Dividends paid	(7,20,000)	
	Net cash from financing activities		1,20,000
	Net increase in cash & cash equivalents		1,20,000
	Cash & cash equivalent at beginning		6,00,000
	Cash & cash equivalent at the end		7,20,000

Illustration 14

Balance Sheets of a company as on 31st March, 2023 and 2024 are as follows:

Liabilities	31.03.23	31.0324	Assets	31.03.23	31.03.24
Equity share capital	10,00,000	10,00,000	Goodwill	1,00,000	80,000
8% Pref. Share capital	2,00,000	3,00,000	Land and Building	7,00,000	6,50,000
General Reserve	1,20,000	1,45,000	Plant and Machinery	6,00,000	6,60,000
Securities Premium	--	25,000	Investments (non trading)	2,40,000	2,20,000
Profit & Loss A/c.	2,10,000	3,00,000	Stock	4,00,000	3,85,000
11% Debentures	5,00,000	3,00,000	Debtors	2,88,000	4,15,000
Creditors	1,85,000	2,15,000	Cash and Bank	88,000	93,000
Provision for tax	80,000	1,05,000	Prepaid Expenses	15,000	11,000
Proposed Dividend	1,36,000	1,44,000	Premium on Redemption of debenture	--	20,000
	24,31,000	**25,34,000**		**24,31,000**	**25,34,000**

Additional Information:

1. Investments were sold during the year at a profit of ₹ 15,000.
2. During the year an old machine costing ₹ 80,000 was sold for ₹ 36,000. Its written down value was ₹ 45,000.
3. Depreciation charged on Plant and Machinery @ 20% on the opening balance.
4. There was no purchase or sale of Land and Building.
5. Provision for tax made during the year was ₹ 96,000.
6. Preference shares were issued for consideration of cash during the year. You are required to prepare:
   (a) Cash Flow Statement as per Ind AS 7.
   (b) Schedule of changes in Working Capital.

Solution:

Cash Flow Statement for the year ending 31st March, 2024

	Particulars	(₹)	(₹)
A	**Cash flow from Operating Activities**		
	Profit and Loss A/c as on 31.3.2024		3,00,000
	Less: Profit and Loss A/c as on 31.3.2023		2,10,000
			90,000

	Particulars	(₹)	(₹)
	Add: Transfer to General Reserve	25,000	
	Provision for Tax	96,000	
	Proposed Dividend	1,44,000	2,65,000
	Profit before Tax		3,55,000
	Adjustment for Depreciation		
	Land and Building	50,000	
	Plant and Machinery	1,20,000	1,70,000
	Profit on Sale of Investments		(15,000)
	Loss on Sale of Plant and Machinery		9,000
	Goodwill written off		20,000
	Interest on Debenture		33,000
	Operating Profit before Working Capital changes		5,72,000
	Adjustment for Working Capital changes:		
	Decrease in Prepaid Expenses		4,000
	Decrease in Stock		15,000
	Increase in Debtors		(1,27,000)
	Increase in Creditors		30,000
	Cash generated from Operations		4,94,000
	Income tax paid		(71,000)
	Net Cash Inflow from Operating Activities (A)		**4,23,000**
B	**Cash flow from Investing Activities**		
	Sale of Investment		35,000
	Sale of Plant and Machinery		36,000
	Purchase of Plant and Machinery		(2,25,000)
	Net Cash Outflow from Investing Activities (B)		**(1,54,000)**
C	**Cash flow from Financing Activities**		
	Issue of Preference Shares		1,00,000
	Premium received on issue of securities		25,000
	Redemption of Debentures at a premium		(2,20,000)
	Dividend paid		(1,36,000)
	Interest paid to Debenture holders		(33,000)

Particulars	(₹)	(₹)
Net Cash outflow from Financing Activities (C)		**(2,64,000)**
Net increase in Cash and Cash Equivalents during the year (A + B + C)		5,000
Cash and Cash Equivalents at the beginning of the year		88,000
Cash and Cash Equivalents at the end of the year		93,000

Working Notes:

1. Dr. Provision for the Tax Account Cr.

Particulars	Amount (₹)	Particulars	Amount (₹)
To, Bank (paid)	71,000	By, Balance b/d	80,000
To, Balance c/d	1,05,000	By, Profit and Loss A/c	96,000
	1,76,000		**1,76,000**

2. Dr. Investment Account Cr.

Particulars	Amount (₹)	Particulars	Amount (₹)
To, Balance b/d	2,40,000	By, balance (bal fig)	35,000
To, profit and loss (profit on sale)	15,000	By, balance c/d	2,20,000
	2,55,000		**2,55,000**

3. Dr. Plant and Machinery Account Cr.

Particulars	Amount (₹)	Particulars	Amount (₹)
To, Balance b/d	6,00,000	By, Bank (sale)	36,000
To, Bank A/c (Purchase)	2,25,000	By, Profit and Loss A/c (loss on sale)	9,000
		By, Depreciation	1,20,000
		By, Balance c/d	6,60,000
	8,25,000		**8,25,000**

Note:

In this question, the date of redemption of debentures is not mentioned. So, it is assumed that the debentures are redeemed at the beginning of the year.

4. Schedule of Changes in Working Capital

Particulars	31 March 2023 (₹)	31 March 2024 (₹)	Changes in Working Capital	
			Increase (₹)	Decrease (₹)
Current Assets				
Stock	4,00,000	3,85,000	-	- 15,000
Debtors	2,88,000	4,15,000	1,27,000	
Prepaid Expenes	15,000	11,000		- 4,000
Cash and Bank	88,000	93,000	5,000	
Total (A)	**7,91,000**	**9,04,000**		
Current Liabilities				
Creditors	1,85,000	2,15,000		30,000
Total (B)	**1,85,000**	**2,15,000**		
Working Capital (A-B)	6,06,000	6,89,000		
Increase in Working Capital	83,000	--	--	83,000
	6,89,000	**6,89,000**	**1,32,000**	**1,32,000**

Illustration 15

The Balance Sheets of a company as on 31st March, 2023 and 2024 are given below: (₹)

Liabilities	31.03.23	31.03.24	Assets	31.03.23	31.03.24
Equity Share Capital	14,40,000	19,20,000	Fixed Assets	38,40,000	45,60,000
Capital Reserve	--	48,000	Less: Depreciation	(11,04,000)	(13,92,000)
General Reserve	8,16,000	9,60,000		27,36,000	31,68,000
Profit & Loss A/c	2,88,000	3,60,000	Investment	4,80,000	3,84,000
9% Debentures	9,60,000	6,72,000	Sundry Debtors	12,00,000	14,00,000
Sundry Creditors	5,50,000	5,90,000	Stock	1,40,000	1,84,000
Bills Payable	26,000	34,000	Cash in hand	4,000	--
Proposed Dividend	1,44,000	1,72,800	Preliminary Expenses	96,000	48,000
Provision for tax	4,32,000	4,08,000			
Unpaid dividend	--	19,200			
	46,56,000	**51,84,000**		**46,56,000**	**51,84,000**

Additional Information:

During the year ended 31st March, 2024 the company:

1. Sold a machine for ₹ 1,20,000; the cost of machine was ₹ 2,40,000 and depreciation provided on it was ₹84,000.

2. Provided ₹ 4,20,000 as depreciation on fixed assets.
3. Sold some investment and profit credited to capital reserve.
4. Redeemed 30% of the debenture @ 105.
5. Decided to write off fixed assets costing ₹ 60,000 on which depreciation amounting to ₹ 48,000 has been provided.

You are required to prepare Cash Flow Statement as per Ind AS-7.

Solution:

Cash Flow Statement for the year ending 31st March, 2024

	Particulars	(₹)	(₹)
A	**Cash Flows from Operating Activities**		
	Profit and Loss A/c		72,000
	(₹ 3,60,000 – ₹ 2,88,000)		
	Adjustments:		
	Increase in General Reserve	1,44,000	
	Depreciation	4,20,000	
	Provision for Tax	4,08,000	
	Loss on Sale of Machine	36,000	
	Premium on Redemption of Debentures	14,400	
	Proposed Dividend	1,72,800	
	Preliminary Expenses written off	48,000	
	Fixed Assets written of	12,000	
	Interest on Debentures	60,480	13,15,680
	Funds from Operations		13,87,680
	Increase in Sundry Creditors	40,000	
	Increase in Bills Payable	8,000	
		48,000	
	Increase in Sundry Debtors	(2,00,000)	
	Increase in Stock	(44,000)	(1,96,000)
	Cash generated from operation		11,91,680
	Less: Income Tax paid		4,32,000
	Net Cash in flows from Operating Activities		**7,59,680**

	Particulars	(₹)	(₹)
B	**Cash flows from Investing Activities**		
	Purchase of Fixed Assets	(10,20,000)	
	Sale of Investment	1,44,000	
	Sale of Fixed Assets	1,20,000	
	Net Cash out flows from Investing Activities		**(7,56,000)**
C	**Cash flow from Financing Activities**		
	Issue of share capital	4,80,000	
	Redemption of Debentures	(3,02,400)	
	Dividend Paid (1,44,000 – 19,200)	(1,24,800)	
	Interest on Debentures	(60,480)	
	Net Cash outflow from Financing Activities		**(7,680)**
	Net Increase in Cash and Cash Equivalents during the year (A+B+C)		(4,000)
	Cash and Cash Equivalents at the beginning of the year		4,000
	Cash and Cash Equivalents at the end of the year		Nil

- It is presumed that the 30% debentures have been redeemed at the beginning of the year.

Working Note:

Dr. **Fixed Assets Account** **Cr.**

Particulars	Amount (₹)	Particulars	Amount (₹)
To, Balance b/d	27,36,000	By, Cash	1,20,000
To, Purchases (balance figure)	10,20,000	By, Loss on sales	36,000
		By, Depreciation	4,20,000
		By, Assets written off	12,000
		By, Balance c/d	31,68,000
	37,56,000		**37,56,000**

Solved Case 1

Presently, the current assets and current liabilities of a company are ₹ 16 lakh and ₹ 8 lakh respectively. Calculate the effect of each of the following transactions individually and totally on the current ratio of the company.

1. Cash purchase of new machinery for ₹ 5 lakh.
2. Purchase of new machinery for ₹ 10 lakh on a medium-term loan from the bank, with 20% margin.
3. Payment of dividend of ₹ 2 lakh.
4. Receipt of a shipment of new materials at landed cost of ₹ 5 lakh, against which the bank finance obtained, is ₹ 3 lakh.

Solution :

Existing Current Ratio (CR) = ₹ 16 lakh / ₹ 8 lakh = 2.

The effect of various transactions individually on the CR will be as under:

1. The CR will decrease, that is CR = ₹ 11 lakh / ₹ 8 lakh = 1.38
2. CR = ₹ 14 lakh / ₹ 8 lakh = 1.75 (decrease)
3. CR = ₹ 14 lakh / ₹ 6 lakh = 2.33 (increase)
4. Current assets will increase, ₹ 16 lakh + ₹ 5 lakh - ₹ 2 lakh = ₹ 19 lakh.

   Current liabilities will increase : ₹ 8 lakh + ₹ 3 lakh = ₹ 11 lakh

   CR = ₹19 lakh / ₹11 lakh = 1.73 (decrease)

Total effect on CR:	(₹)
Current assets	16 Lakh
Less: Cash (purchase of machinery)	5
Cash (paid for machinery purchased)	2
Cash (payment of dividend)	2
Cash (paid for inventory purchased)	2
Add: Inventory (purchased)	5
	10
Current liabilities (present)	8
Less: Dividend payable	2
Add: Bank overdraft	3
	9

The current ratio after these changes would be ₹10 lakh / ₹9 lakh = 1.11

Solved Case 2

A partial list of trend and common-size percentages for ABC Ltd. is given below.

	March, current year	March, previous year
Trend percentages:		
Sales (net)	120	100
Cost of goods sold	?	100
Gross profit on sales	?	100
Operating expenses and income taxes	?	100
Net income	?	100
Common-size percentages:		
Sales (net)	100	100
Cost of goods sold	?	?
Gross profit on sales	40	?
Operating expenses and income taxes	20	25
Net income	20	10

Determine the missing trend and common-size percentages.

Solution :

Determination of common-size percentages and missing trends

Particulars	Common-size percentages		Trend percentages	
	March current year	March previous year	March current year	March previous year
Sales (net)	100	100	120	100
Cost of goods sold	60	65	110.76	100
Gross profit on sales	40	35	137.14	100
Operating expenses and income taxes	20	25	96	100
Net income	20	10	240	100

Solved Case 3

ABC Ltd. finds that its opening bank balance of ₹ 1,80,000 as on April 1, 2023 has been converted into an overdraft of ₹ 75,000 by the end of the year. From the information given below, prepare a statement to show how this happened.

	Year beginning (₹)	Year-end (₹)
Fixed assets	7,50,000	11,20,000
Stock in trade	1,90,000	3,30,000
Book debts	3,80,000	335000
Trade creditors	2,70,000	3,50,000
Share capital	250000	3,00,000
Share premium		25,000
Bills receivable	87,500	95,000

The profit before depreciation and income tax was ₹ 2,40,000. During the year, income tax to the extent of ₹1,37,500 was paid. Dividend paid were (i) final on the capital as on April 1, 2023 at 10% and (ii) interim at 5% on the year-end capital.

Solution:

Cash Flow Statement	(₹)
Sources of cash	
Cash from business operations	2,17,500
Issue of long-term liabilities:	
Share capital	75,000
Total cash received	2,92,500
Uses of cash	
Purchase of fixed assets	3,70,000

Cash Flow Statement		(₹)
Recurring payments to investors:		
Interim dividends [₹3,00,000 × 0.05] =	₹15,000	
Final dividends [₹2,50,000 × 0.10] =	₹25,000	40,000
Miscellaneous payments:		1,37,500
Income tax		5,47,500
Total cash paid		2,55,000
Decrease in cash (sources-uses)		1,80,000
That is, balance in the beginning		75,000
Add: overdraft		2,55,000

Working Notes:

Cash from business operations	(₹)	(₹)
Profit before depreciation and taxes		2,40,000
Add: increase in cash (–CA or +CL):		
Trade creditors	80,000	
Book debts	45,000	1,25,000
Less: decrease in cash (+CA or –CL):		
Bills receivable	7,500	
Stock	1,40,000	1,47,500
Total		2,17,500

Exercise

A. Theoretical Questions:

⊙ Multiple Choice Questions

1. Accounting Ratios are important tools used by –
   (a) Managers
   (b) Researchers
   (c) Investors
   (d) All of the above

2. Net Profit Ratio Signifies:
   (a) Operational Profitability
   (b) Liquidity Position
   (c) Big-term Solvency
   (d) Profit for Lenders.

3. Working Capital Turnover measures, the relationship of Working Capital with:
   (a) Fixed Assets
   (b) Sales
   (c) Purchases
   (d) Stock

4. In Ratio Analysis, the term Capital Employed refers to:
   (a) Equity Share Capital
   (b) Net worth
   (c) Shareholders' Funds
   (d) Current Assets

5. Dividend Pay-out Ratio is:
   (a) PAT Capital
   (b) DPS ÷ EPS
   (c) Pref. Dividend ÷ PAT
   (d) Pref. Dividend ÷ Equity Dividend.

6. DuPont Analysis deals with:
   (a) Analysis of Current Assets
   (b) Analysis of Profit

(c) Capital Budgeting

(d) Analysis of Fixed Assets.

7. In Net Profit Ratio, the denominator is:

(a) Net Purchases

(b) Net Sales

(c) Credit Sales

(d) Cost of goods sold.

8. Inventory Turnover measures the relationship of inventory with:

(a) Average Sales

(b) Cost of Goods Sold

(c) Total Purchases

(d) Total Assets.

9. The term 'EVA' is used for:

(a) Extra Value Analysis

(b) Economic Value Added

(c) Expected Value Analysis

(d) Engineering Value Analysis.

10. Return on Investment may be improved by:

(a) Increasing Turnover

(b) Reducing Expenses

(c) Increasing Capital Utilization

(d) All of the above.

11. In Current Ratio, Current Assets are compared with:

(a) Current Profit

(b) Current Liabilities

(c) Fixed Assets

(d) Equity Share Capital.

12. ABC Ltd. has a Current Ratio of 1.5: 1 and Net Current Assets of ₹ 5,00,000. What are the Current Assets?
    (a) ₹ 5,00,000
    (b) ₹ 10,00,000
    (c) ₹ 15,00,000
    (d) ₹ 25,00,000

13. There is deterioration in the management of working capital of XYZ Ltd. What does it refer to?
    (a) That the Capital Employed has reduced
    (b) That the Profitability has gone up
    (c) That debtors collection period has increased
    (d) That Sales has decreased.

14. Which of the following does not help to increase Current Ratio?
    (a) Issue of Debentures to buy Stock
    (b) Issue of Debentures to pay Creditors
    (c) Sale of Investment to pay Creditors
    (d) Avail Bank Overdraft to buy Machine.

15. Debt to Total Assets Ratio can be improved by:
    (a) Borrowing More
    (b) Issue of Debentures
    (c) Issue of Equity Shares
    (d) Redemption of Debt.

16. Ratio of Net Income to Number of Equity Shares known as:
    (a) Price Earnings Ratio
    (b) Net Profit Ratio
    (c) Earnings per Share
    (d) Dividend per Share.

17. Trend Analysis helps comparing performance of a firm -
    (a) With other firms
    (b) Over a period of firm
    (c) With other industries
    (d) With other companies

18. A Current Ratio of less than one means:
    (a) Current Liabilities < Current Assets
    (b) Fixed Assets > Current Assets
    (c) Current Assets < Current Liabilities
    (d) Share Capital > Current Assets.

19. A firm has Capital of ₹ 10,00,000; Sales of ₹ 5,00,000; Gross Profit of ₹ 2,00,000 and Expenses of ₹ 1,00,000. What is the Net Profit Ratio?
    (a) 20%
    (b) 50%
    (c) 10%
    (d) 40%.

20. XYZ Ltd. has earned 8% Return on Total Assests of ₹ 50,00,000 and has a Net Profit Ratio of 5%. Find out the Sales of the firm.
    (a) ₹ 4,00,000
    (b) ₹ 2,50,000
    (c) ₹ 80,00,000
    (d) ₹ 83,33,333.

21. Suppliers and Creditors of a firm are interested in:
    (a) Profitability Position
    (b) Liquidity Position
    (c) Market Share Position
    (d) Debt Position.

22. Which of the following is a measure of Debt Service capacity of a firm?
    (a) Current Ratio
    (b) Acid Test Ratio
    (c) Interest Coverage Ratio
    (d) Debtors Turnover.

23. Gross Profit Ratio for a firm remains same but the Net Profit Ratio is decreasing. The reason for such behavior could be:
    (a) Increase in Cost of Goods Sold
    (b) If Increase in Expense

(c) Increase in Dividend

(d) Decrease in Sales.

24. Which of the following statements is correct?

(a) A Higher Receivable Turnover is not desirable

(b) Interest Coverage Ratio depends upon Tax Rate

(c) Increase in Net Profit Ratio means increase in Sales

(d) Lower Debt-Equity Ratio means lower Financial Risk.

25. Debt to Total Assets of a firm is 2. The Debt to Equity would be:

(a) 0.80

(b) 0.25

(c) 1.00

(d) 0.75

26. Which of the following helps analysing return to equity Shareholders?

(a) Return on Assets

(b) Earnings Per Share

(c) Net Profit Ratio

(d) Return on Investment.

27. Return on Assets and Return on Investment Ratios belong to:

(a) Liquidity Ratios

(b) Profitability Ratios

(c) Solvency Ratios

(d) Turnover.

28. XYZ Ltd. has a Debt Equity Ratio of 1.5 as compared to 1.3 Industry average. It means that the firm has:

(a) Higher Liquidity

(b) Higher Financial Risk

(c) Higher Profitability

(d) Higher Capital Employed.

29. Ratio Analysis can be used to study liquidity, turnover, profitability, etc. of a firm. What does Debt-Equity Ratio help to study?

(a) Solvency

(b) Liquidity

(c) Profitability

(d) Turnover,

30. In Inventory Turnover calculation, what is taken in the numerator?

(a) Sales

(b) Cost of Goods Sold

(c) Opening Stock

(d) Closing Stock.

31. Statement of cash flows are included in –

(a) Ind AS – 3

(b) Ind AS – 6

(c) Ind AS – 7

(d) Ind AS – 113

32. The capital of RG Limited is as follows :

90% preference shares of ₹ 10 each ₹ 3,00,000

Equity shares of ₹ 10 each ₹ 8,00,000

Following further information is available :

Profit after Tax ₹ 2,70,000

Equity Dividend paid 20%

The market price of equity shares ₹ 40 each

Then the EPS and PE ratio are :

(a) ₹ 3.12 and 10.80

(b) ₹ 3.33 and 10.34

(c) ₹ 4.51 and 12.56

(d) ₹ 3.04 and 13.16

33. The ratio of current assets (₹3,00,000) to current liabilities (₹2,00,000) is 1.5 : 1. The accountant of this firm is interested in maintaining a current ratio of 2 : 1 by paying some part of current liabilities. Hence, the amount of current liabilities which must be paid for this purpose is

(a) ₹ 1,00,000

(b) ₹ 2,00,000

(c) ₹ 2,50,000

(d) ₹ 1,50,000

34. The P/V ratio of a firm dealing in precision instruments is 50% and margin of safety is 40%. Calculate net profit, if the sales volume is ₹ 50,00,000.

    (a) ₹ 1,00,000

    (b) ₹ 5,00,000

    (c) ₹ 10,00,000

    (d) ₹ 6,00,000

35. Return on Equity (ROE) is computed as

    (a) (NP Ratio × Assets Turnover Ratio) ÷ Equity Multiplier

    (b) (NP Ratio x Assets Turnover Ratio) × Equity Multiplier

    (c) (NP Ratio x Equity Multiplier) + Assets Turnover Ratio

    (d) (NP Ratio + Assets Turnover Ratio) + Equity Multiplie

36. The ratio of Current Assets (₹9,00,000) to Current liabilities (₹6,00,000) is 1.5 :1. The accountant of this firm is interested in maintaining a current ratio of 2:1 by paying some part of current liabilities. Hence, the amount of current liabilities which must be paid for this purpose is

    (a) ₹ 3,00,000

    (b) ₹ 2,00,000

    (c) ₹ 6,00,000

    (d) ₹ 4,00,000

37. A firm has a capital of ₹ 10 lakhs, sales of ₹ 5 lakhs, gross profit of ₹ 2 lakhs and expenses of ₹1 lakh. The Net Profit Ratio is:

    (a) 50%

    (b) 40%

    (c) 20%

    (d) 10%

38. In Net Profit Ratio, the denominator is:

    (a) Credit Sales

    (b) Net Sales

    (c) Cost of Sales

    (d) Cost of Goods Sold

39. ROI (Return on Investment) can be decomposed into the following ratios:

    (a) Overall Turnover Ratio and Current Ratio

    (b) Net Profit Ratio and Fixed Assets Turnover

(c) Working Capital Turnover Ratio and Net Profit Ratio

(d) Net Profit Ratio and Overall Turnover Ratio

40. Which of the following does not help to increase Current Ratio?

(a) Issue of Debentures to buy Stock

(b) Issue of Debentures to pay Creditors

(c) Sale of Investment to pay Creditors

(d) Avail Bank Overdraft to buy Machine

41. Which of the following statements is correct?

(a) A higher Receivable Turnover is not desirable.

(b) Interest Coverage Ratio depends upon Tax Rate.

(c) Increase in Net Profit Ratio means increase in Sales.

(d) Lower Debt-Equity Ratio means lower Financial Risk.

42. Which of the following is a Profitability Ratio?

(a) Proprietary Ratio

(b) Debt-Equity Ratio

(c) Price-Earning Ratio

(d) Fixed Asset Ratio

43. The 'Dividend-Payout Ratio' is equal to

(a) The Dividend yield plus the capital gains yield

(b) Dividends per share divided by Earning per Equity Share

(c) Dividends per share divided by par value per share

(d) Dividends per share divided by current price per share

44. What does Debt-Equity Ratio help to study?

(a) Solvency

(b) Liquidity

(c) Profitability

(d) Turnover

45. Of the product of which two ratios is the ROI composed?

(a) Overall Turnover Ratio and Current Ratio

(b) Net Profit Ratio and Fixed Assets Turnover

(c) Working Capital Turnover Ratio and Net Profit Ratio

(d) Net Profit Ratio and Overall Turnover Ratio

46. Profitability and Liquidity ratios are used for :

(a) Normative purposes only

(b) Predictive purposes only

(c) Both Normative and Predictive purposes

(d) None of these

47. G Ltd. Is a manufacturing company having asset turnover ratio of 2 and debt- asset ratio of 0.60 for the year ended 31st March ,2009 . If its net profit margin is 5%, the Return on Equity(ROE) of the company will be :

(a) 20%

(b) 25%

(c) 16.7%

(d) data insufficient

48. A firm seeks to increase its current ratio from 1.5 before its closing date of the accounts. The action that would make it possible is :

(a) Delaying payment of salaries

(b) Increase charge for depreciation

(c) Making cash payment to creditors

(d) Selling marketable securities for cash at book value.

49. The dividends distributed to the shareholders and taxes paid during the year are shown as application of funds when provision for dividends and provision for taxes are treated as :

(a) Current liabilities

(b) Non-current liabilities

(c) Fund items

(d) Non-fund items

50. The total asset-turnover ratio and total asset to net-worth of LEENZA LTD. are 2 and 1.75 respectively. If the net-profit margin of the company is 8%, What will be its Return on Equity (ROE)?

(a) 28.0%

(b) 25.5%

(c) 20.0%

(d) 26.4%

51. The total asset – turnover ratio and total asset to net- worth ratio of a company are 2.10 and 2.50 respectively. If the net profit margin of the company is 6%, what would be the return on equity?

    (a) 30.50%

    (b) 31.50%

    (c) 30.00%

    (d) 32.50%

52. X Ltd has an ROA of 10% and a profit margin of 2%. The Company's total asset turnover is

    (a) 5%

    (b) 20%

    (c) 12%

    (d) 8%

53. High proportion of gearing will increase:

    (a) Financial risk

    (b) Business risk

    (c) Cost of funds

    (d) Shareholders equity

54. IG Ltd. has a gearing of 30%. Its cost of equity is 21% and the cost of debt is 15%. The company's WACC is:

    (a) 14.3%;

    (b) 19.2%;

    (c) 14.7%;

    (d) 4.5%.

55. Y Ltd has an ROA of 10% and a profit margin of 2%. The Company's total asset turnover is

    (a) 5

    (b) 20

    (c) 12

    (d) 8

56. Current Assets ₹ 20,00,000; Current Liabilities ₹ 10,00,000 and Stock ₹ 2,00,000, then what is liquid ratio?

    (a) 2 times

    (b) 1.8 times

    (c) 1.4 times

    (d) None of these

57. PAT of a company ₹ 100 lakhs and number of equity shares of ₹ 10 each is ₹ 50 lakhs, then EPS is:
    (a) ₹ 2
    (b) ₹ 1
    (c) ₹ 10
    (d) None of these

58. _____ ratio is the indicator of the firm's commitment to meet its short term liabilities.
    (a) Super quick ratio
    (b) Current ratio
    (c) Proprietary ratio
    (d) Quick ratio

59. _____ ratio is also termed as Acid test ratio.
    (a) Defensive interval ratio
    (b) Current ratio
    (c) Proprietary ratio
    (d) Quick ratio

60. The dividend-payout ratio is equal to
    (a) the dividend yield plus the capital gains yield.
    (b) dividends per share divided by earnings per share.
    (c) dividends per share divided by par value per share.
    (d) dividends per share divided by current price per share.

61. Liquidity ratios are expressed in
    (a) Pure ratio form
    (b) Percentage
    (c) Rate or time
    (d) None of the above

62. When the concept of ratio is defined in respected to the items shown in the financial statements, it is termed as
    (a) Accounting ratio
    (b) Financial ratio
    (c) Costing ratio
    (d) None of the above

63. Profit for the objective of calculating a ratio may be taken as

(a) Profit before tax but after interest

(b) Profit before interest and tax

(c) Profit after interest and tax

(d) All of the above

64. Current Assets ₹ 20,00,000 ; Current Liabilities ₹10,00,000 and Stock ₹4,00,000, then what is liquid ratio?

(a) 2 times

(b) 1.6 times

(c) 1.4 times

(d) None of these

65. A ratio of ___ is considered satisfactory by the financial institutions the greater debt service coverage ratio indicates the better debt servicing capacity of the organization.

(a) 1

(b) 2

(c) 3

(d) 4

66. Liquid Liability = Current Liability – Bank Overdraft – __.

(a) Cash Credit

(b) Trade Credit

(c) Credit Payable

(d) None of the Above

67. Ratio analysis is the process of determining and interpreting numerical relationships based on _.

(a) Financial values

(b) Financial statements

(c) Financial numerical information

(d) All of the above

68. Ratio analysis is based on _____ measure.

(a) Relative

(b) absolute

(c) Both of the above

(d) None of the above

69. The persons interested in the analysis of financial statements can be grouped as _____

(a) Owners or investors

(b) Creditors

(c) Financial executives

(d) All of the above

70. The term 'Operating Profit' means profit before _.

(a) Interest

(b) tax

(c) interest and tax

(d) interest or tax

71. Debt- equity Ratio is an example of _____.

(a) Short term solvency Ratio

(b) Long term solvency Ratio

(c) Profitability Ratio

(d) None of the above

72. In Cash Flow Statement, Cash includes_.

(a) cash on hand

(b) demand deposits with banks

(b) cash on hand and demand deposits with banks

(d) cash on hand or demand deposits with banks

73. The treatment of interest and dividends received and paid depends upon the nature of the enterprise. For this purpose, the enterprises are classified as .

(a) (i) Financial enterprises, and (ii) Operating enterprises.

(b) (i) Financial enterprises, and (ii) Other enterprises.

(c) (i) Financial enterprises, and (ii) Non-Financial enterprises.

(d) (i) Trading enterprises, and (ii) Non - Trading enterprises.

74. Cash Flow Statement is _____for Income Statement or Funds Flow Statement.

(a) not a substitute

(b) substitute

(c) depends on situation

(d) None of the above

75. Funds Flow Statement reveals the change in ____between two Balance Sheet dates.

(a) Working capital

(b) Internal capital

(c) Share capital

(d) Both (a) & (c)

Answers

1	2	3	4	5	6	7	8	9	10
d	a	a	d	b	b	b	b	b	d
11	12	13	14	15	16	17	18	19	20
b	c	c	d	d	c	b	c	a	c
21	22	23	24	25	26	27	28	29	30
b	c	b	d	b	b	b	b	a	b
31	32	33	34	35	36	37	38	39	40
c	d	a	c	b	b	c	b	d	d
41	42	43	44	45	46	47	48	49	50
d	c	b	a	d	c	b	c	b	a
51	52	53	54	55	56	57	58	59	60
b	a	a	b	a	b	d	b	d	b
61	62	63	64	65	66	67	68	69	70
a	a	d	b	b	a	d	a	d	c
71	72	73	74	75					
b	c	b	a	a					

⊙ State True or False

1. Cash from business operations can be determined from income statement.
2. Working capital from business operations can be determined from profit and loss account.
3. Sources of cash should always be more than uses of cash, in the context of cash flows statement.
4. Interest paid on debentures is a part of operating activities.
5. Interest received on two-month deposits in bank is shown under investing activities.

6. Sources of cash and uses of cash are to be equal
7. Cash flows are inflows and outflows of cash and cash-equivalents.
8. Revaluation of building affects cashflows.
9. Sale proceeds from machinery, being a source of finance, form part of financing activities.
10. Cash flows statement is mandatory for all business firms.
11. In normal circumstances, a firm has positive cash from operations and negative cash flow from investing activities.
12. Current ratio and acid-test ratio of a business firm are virtually the same; this implies that the firm has low investment in inventory.
13. A company's current ratio is 2.0. If it uses cash to pay creditors, this transaction would cause a decrease in current ratio.
14. Solvency ratios measure the firm's ability to cater to the obligations arising out of long-term debt.
15. Equity funds are greater than equity capital in a loss-incurring firm.
16. In general, low turnover ratios are desirable.
17. Earnings yield is determined dividing EPS by acquisition price per equity share.
18. Return on equity funds is determined by dividing EAT by average net worth.
19. Internal growth rate is the maximum rate at which the firm can grow without external financing of any kind.
20. The sustainable growth rate is the maximum rate at which the company can grow by using retained earnings.
21. It is conceptually correct to determine stock turnover ratio (finished goods) by dividing cost of goods sold by average stock.

Answer:

1	**F**	**2**	**T**	**3**	**F**
4	**F**	**5**	**F**	**6**	**F**
7	**T**	**8**	**F**	**9**	**F**
10	**F**	**11**	**F**	**12**	**T**
13	**F**	**14**	**T**	**15**	**F**
16	**F**	**17**	**F**	**18**	**F**
19	**T**	**20**	**F**	**21**	**T**

⊙ Fill in the Blanks

1. Cash flows statement (based on Ind AS-7) indicates change in _____.
2. Decrease in creditors _____ cash.
3. Interest received on long-term investments is shown under _____.

4. Decrease in inventory _____ cash.
5. Increase in pre-paid expenses _____ cash.
6. Cash payments to suppliers for goods and services are shown under _____.
7. Cash-flow statement (based on Ind AS-7) for listed companies should be presented as per the _____ method.
8. Cash payments to acquire long-term assets form part of _____ activities.
9. Buy back of shares is shown under _____ activities).
10. Dividends paid to shareholders are classified as _____ activities).
11. An analyst applied the DuPont System to the following data of a company: (a) equity turnover 4.2, (b) net profit margin 5.5%, (c) total assets turnover 2.0 and (d) dividend payout ratio 30%; the company's rate of return on equity is _____.
12. Four-times stock turnover ratio implies _____ months inventory holding period.
13. The following information is given about a company: (a) current assets ₹ 900 lakh and current liabilities ₹ 450 lakh in current year and (b) current assets ₹ 1,100 lakh and current liabilities ₹ 530 in previous year. The approximate percentage decrease in current ratio is _____.
14. Presently, current assets and current liabilities of a company are ₹ 16 lakh and ₹ 8 lakh respectively. The current ratio will _____ on purchase of new machinery of ₹ 6 lakh.
15. Purchase of treasury bills will _____acid-test ratio.
16. Assume that the company's existing debt-equity ratio is 2:1, the ploughing back of profits by a company will _____ it.
17. A two-months debtor collection period implies that debtors turnover ratio is _____.
18. _____ is a more rigorous test of the solvency position of a business firm.
19. ROR on shareholders' equity is computed dividing EAT by _____.
20. Issue of 12% preference shares will _____ debt-equity ratio of a corporate enterprise.

Answers:

1	Cash and Cash Equivalents
4	Increases
7	Indirect
10	Financing
13	4.0%
16	Decrease
19	Shareholders' Funds

2	Decreases
5	Decreases
8	Investing
11	23.1%
14	Decrease
17	6 Times
20	Decrease

3	**Investing Activities**
6	**Operating**
9	**Financing**
12	**3**
15	**Not affect**
18	**Debt Service Coverage Ratio**

Short Essay Type Qestions

1. What are the basic objectives of financial analysis or financial statement analysis?
2. Discuss the importance and benefits of Financial Analysis.
3. Discuss the different types of Financial Analysis.
4. Mention differences between traditional approach and modern approach of FSA.
5. What do you mean by Comparative Financial Analysis? Explain.
6. What do you mean by Common-Size Financial Statements? Explain.
7. What is Trend Analysis? Discuss.
8. Mention the uses of Ratio Analysis.
9. Classify Ratios in view of Financial Analysis.
10. What is capital gearing ratio?
11. Discuss Beneish M Score model.
12. Explain Piotroski F Score model.
13. State the significance of Funds Flow Statement.
14. Mention the limitations of Funds Flow Statement Analysis.
15. What are the sources and uses or application of funds?

Essay Type Questions

1. State the important methods or tools used in analysis of financial statements.
2. Distinguish between funds flow statement and cash flow statement.
3. 'Cash Flow Statement reveals the causes of changes in cash position of business concern between two dates of Balance Sheets.'- Explain.
4. Discuss the limitations of cash flow statement.
5. Discuss the need of preparing cash flow statement.
6. Write short notes on funds flow statement and cash flow statement.
7. There are four groups of financial ratios; liquidity, leverage, activity, and profitability. Financial analysis is conducted by four types of analysts: management, equity investors, long-term creditors and short-term creditors. You are required to (a) explain each type of ratio, (b) explain the emphasis of each type of analyst, (c) state if the same basic approach to financial analysis should be taken by each group of analysts.
8. Briefly discuss the importance of the following accounting ratios: (a) Liquidity ratio, (b) Debt-equity ratio, (c) Stock-turnover rate, and (d) Ratio of debtors to turnover.
9. Explain the procedure that you would adopt to study the liquidity of a business firm.
10. How would you analyze the financial position of a company from the point of view of (a) an investor, (b) a creditor, and (c) a financial executive of the company?
11. Discuss the importance of ratio analysis for interfirm and intrafirm comparisons, including circumstances responsible for its limitations. If any.

12. Distinguish between percentage analysis and ratio analysis relating to the interpretation of financial statements. What is the value of these two types of analysis?
13. How does the acid-test ratio differ from the current ratio? How are they similar? What is the usefulness of the defensive interval ratio?
14. What is the relationship of the assets turnover rate to the rate of return on total assets?
15. Two companies have the same amount of working capital. The current debt paying ability of one company is much weaker than that of the other. Explain how this could occur.
16. (a) Discuss some inherent limitations of single-year financial statements for purposes of analysis and interpretation. (b) To what extent are these limitations overcome by the use of comparative statements?
17. What are the limitations of financial ratios as a technique for appraising the financial position of a company?
18. 'A uniform system of accounts, including identical forms for balance sheets and income statements is a prerequisite of inter firm comparisons.' Elucidate.
19. Discuss Altman's Z Score Model with criticism.

A. Numerical Questions:

⊙ Comprehensive Numerical Problems

1. You have been furnished with the financial information of Aditya Mills Ltd for the current year.

Balance sheet, March 31, current year				
Liabilities	**Amount (₹ thousand)**	**Assets**		**Amount (₹ thousand)**
Equity share capital (₹100 each)	1,000	Plant and equipment		640
Retained earnings	368	Land and buildings		80
Sundry creditors	104	Cash		160
Bills payable	200	Sundry debtors	360	
Other current liabilities	20	Less: Allowances	40	320
		Stock		480
		Prepaid insurance		12
	1,692			**1,692**

Statement of profit year ended March 31, current year	
Particulars	**(₹ Thousand)**
Sales	4,000
Less: Cost of goods sold	3,080
Gross profit on sales	920
Less: Operating expenses	680
Net profit	240
Less: Taxes (0.35)	84
Net profit after taxes	156

Sundry debtors and stock at the beginning of the year were ₹ 3,00,000 and ₹ 4,00,000 respectively.

(a) Determine the following ratios of the Aditya Mills Ltd: (i) Current ratio, (ii) Acid-test ratio, (iii) Stock turnover, (iv) Debtors turnover, (v) Gross profit ratio, (vi) Net profit ratio, (vii) Operating ratio, (viii) Earnings per share, (ix) Rate of return on equity capital, and (x) Market value of the shares if P/E ratio is 10 times,

(b) Indicate for each of the following transactions whether the transaction would improve, weaken or have an effect on the current ratio of the Aditya Mills Ltd: (i) Sell additional equity shares, (ii) Sell 10% debentures, (iii) Pay bills payable, (iv) Collect sundry debtors, (v) Purchase additional plant, (vi) Issuing bills payable to creditors, (vii) Collecting bills receivable from debtors, (viii) Purchase of treasury bills, and (ix) Writing off bad debt.

2. The following is the summary of the financial ratios of a company relating to its liquidity position:

	Year 1	Year 2	Year 3
Current ratio	2	2.13	2.28
Acid test ratio	1.20	1.10	0.90
Debtors turnover	10	8	7
Stock turnover	6	5	4

The current ratio is increasing, while the acid-test ratio is decreasing. Explain the contributing factor(s) for this apparently divergent trend.

3. Below are selected ratios for two companies in the same industry, along with industry average:

	A	B	Industry
Current ratio	221	561	241
Acid-test ratio	121	301	131
Debt-asset ratio	36	5	35
Operating expenses ratio	18	17.5	20
Number of times interest earned	6	12	5
Stock turnover	8.5	6.5	7.0
Debtors' turnover	11.0	15.0	11.4
Rate of return on total assets	17	10	13.5

Can we say on the basis of above ratios and information that company B is better than company A because its ratios are better in six out of eight areas (all except stock turnover and rate of return on total assets)? The company B is better than the industry average in the same six categories.

Answer:

1	(a) (i) 3:1 (ii) 1.48:1 (iii) 7 times (iv) 12.12 times (v) 23 % (vi) 3.9 % (vii) 94 % (viii) ₹15.6 (ix) 11.4% (x) ₹156 (b) (i) Improve (ii) Improve (iii) Improve (iv) No effect (v) Weaken (vi) No effect (vii) No effect (viii) No effect (ix) Weaken
2	The contributing factor for the divergent trend is the accumulation of stocks with the company over the years.
3	B need not necessarily be better than A.

Unsolved Case(s)

1. The comparative income statements and balance sheets for MN Ltd. for the years ending December 31, 2024 and 2023, are given here.

Income Statements of MN Ltd.

For the years ended December 31, 2024 and 2023

	2024 (₹)	2023 (₹)
Net sales	600,000	575,000
Cost of goods sold	500,000	460,000
Gross margin	100,000	115,000
Expenses:		
Selling and administrative expenses	66,000	60,000
Interest expense	4,000	3,000
Total expenses	70,000	63,000
Income before taxes	30,000	52,000
Income taxes	12,000	21,000
Net income	18,000	31,000
Earnings per share	1.80	3.10

2. Comparative income statements for RR Ltd. for 2024 and 2023 are given below.

Income Statements of RR Ltd.

For the years ended December 31, 2024 and 2023

	2024 (₹)	2023 (₹)
Sales	800,000	450,000
Cost of goods sold	(510,000)	(240,000)
Gross profit on sales	290,000	210,000
Selling and general expenses	(100,000)	(80,000)
Operating income	190,000	130,000
Interest expense	(40,000)	(30,000)

Income before income tax	150,000	100,000
Income tax expense	(45,000)	(30,000)
Net income	105,000	70,000

(a) Prepare common-size income statements for RR Ltd. for 2024 and 2023.

(b) Return on sales for RR Ltd. is lower in 2024 than in 2023. What expense or expenses are causing this lower profitability?

3. You are required to state the internal accounting ratios that you would use in this type of business to assist the management of the company in measuring the efficiency of its operation including its use of capital.

You have been asked by the Management of the WS Ltd. to project the Trading Profit & Loss Account and the Balance Sheet on the basis of the following estimated figures and ratios for the next financial year ending 31st December, 2024.

Ratio of gross profit	20%
Stock turnover ratio	5 times
Average debt collection period	3 months
Creditors' velocity	3 months
Current ratio	2
Proprietary ratio (Fixed assets to capital employed)	75%
Capital gearing ratio	30%
Net profit to issued capital (equity)	10%
General reserve & P/L to equity shareholders' fund	20%
Preference share capital to debentures	2:1
Cost of sales consists of 50% for materials	
Gross profit	₹ 6,25,000

4. The following are the summarized Balance Sheets of ABC Ltd. as on 31st December, 2022 and 31st December, 2023.

	31.12.2022 (₹)	31.12.2023 (₹)
Liabilities		
Equity shares of ₹ 10 each	4,00,000	4,80,000
Securities premium account	-	20,000

General reserve	60,000	1,00,000
Profit & Loss account	96,000	1,36,000
12% Debentures	1,00,000	-
Trade payables	2,60,000	2,80,000
Proposed dividend	40,000	48,000
Provision for depreciation on plant & machinery	2,80,000	3,00,000
Provision for depreciation on equipment	12,000	8,000
	12,48,000	13,72,000
Assets		
Freehold land & buildings	2,10,000	2,80,000
Plant & machinery at cost	5,80,000	6,40,000
Equipment at cost	18,000	20,000
Stocks	2,60,000	2,10,000
Debtors	1,50,000	1,70,000
Cash	30,000	52,000

Note:

The plant and machinery which cost ₹ 40,000 and in respect of which ₹ 26,000 had been written off as depreciation was sold during the year 2023 for ₹ 6,000.

Equipment which costs ₹ 10,000 and in respect of which ₹ 8,000 had been written off as depreciation was sold for ₹ 4,000 during 2023.

The dividend which was declared in 2022 was paid during 2023.

You are required to prepare:

(a) A statement showing the change in working capital during 2023.

(b) A statement showing the sources and application of working capital (Fund Flow Statement) during 2023.

[Decrease in working capital ₹ 28,000; Fund from operations ₹ 1,84,000; Sources and applications of fund ₹ 2,94,000 and ₹ 3,22,000]

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