

CHAPTER - 9

ACCOUNTING RATIOS

TEST YOUR UNDERSTANDING I

• State which of the following statements are True or False.

(a) The only purpose of financial reporting is to keep the managers informed about the progress of operations.

Answer False

(b) Analyses of data provided in the financial statements is termed as financial analysis.

Answer True

(c) Long term creditors are concerned about the ability of a firm to discharge its obligations to pay interest and repay the principal amount of term.

Answer True

(d) A ratio is always expressed as a quotient of one number divided by another.

Answer False

(e) Ratios help in comparisons of a firm's results over a number of accounting periods as well as with other business enterprises.

Answer True

(f) One ratios reflect both quantitative and qualitative aspects.

Answer False

DO IT YOURSELF I

Question 1. Current ratio =4.5:1,quick ratio =3:1, Inventory is Rs.36,000. Calculate the current assets and current liabilities.

Answer

Current ratio = 4.5 : 1

Liquid ratio = 3 : 1

Inventory = ₹ 36,000

Let CL be x.

Then, CA = 4.5x and LA = 3x

Inventory = CA - LA

36,000 = 4.5x - 3x

36,000 = 1.5x

$$x = \frac{36000}{1.5}$$

x = 24,000

Hence, CL = 24,000

and CA = 24,000 × 4.5 = ₹ 1,08,000

Question 2. Current liabilities of a company are ₹ 5,60,000 current ratio is 5 : 2 and quick ratio is 2 : 1. Find the value of the stock.

Answer

$$CL = ₹ 5,60,000$$

$$CR = 5 : 2, QR = 2 : 1$$

(i) $CR = \frac{\text{Current Assets}}{\text{Current Liabilities}} \text{ or } \frac{5}{2} = \frac{CA}{5,60,000}$

or $2 \times CA = 5 \times 5,60,000 \text{ or } CA = \frac{28,00,000}{2}$

$$CA = ₹ 14,00,000$$

(ii) $\text{Quick Ratios} = \frac{\text{Quick Assets}}{\text{Current Liabilities}}$

or $\frac{2}{1} = \frac{QA}{5,60,000}$

or $QA = 2 \times 5,60,000$

$$QA = ₹ 11,20,000$$

(iii) $\text{Stock} = \text{Current Assets} - \text{Quick Assets}$

$$= 14,00,000 - 11,20,000 = 2,80,000$$

Question 3. Current assets of a company are Rs. 5,00,000. Current ratio is 2.5 : 1 and quick ratio is 1 : 1. Calculate the value of current liabilities, liquid assets and stock.

Answer

$$\text{Current Asset} = 5,00,000$$

$$\text{Current Ratio} = 2.5 : 1$$

$$\text{Quick Ratio} = 1 : 1$$

(i) $\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$

or $\frac{2.5}{1} = \frac{5,00,000}{CL}$

or $2.5CL = 5,00,000$

or $CL = \frac{5,00,000}{2.5}$

or $CL = ₹ 2,00,000$

(ii) $\text{Quick Ratio} = \frac{\text{Quick Assets}}{\text{Current Liabilities}}$

or $\frac{1}{1} = \frac{\text{Quick Assets}}{2,00,000}$

or $2,00,000 = \text{Quick Assets}$

$$\text{Stock} = \text{Current Assets} - \text{Quick Assets}$$

$$= 5,00,000 - 2,00,000$$

$$= ₹ 3,00,000$$

TEST YOUR UNDERSTANDING II

(i) The following groups of ratios primarily measure risk

- (a) liquidity, activity and profitability
- (b) liquidity, activity and common stock
- (c) liquidity, activity and debt
- (d) activity, debt and profitability

Answer (c) Liquidity, activity and debt

(ii) The-----ratios are primarily measures of return.

- (a) liquidity (b) activity
- (c) debt (d) profitability

Answer (b) Activity

(iii) The.....of a business firm is measured by its ability to satisfy its short term obligations as they come due.

- (a) activity (b) liquidity
- (c) debt (d) profitability

Answer (b) Liquidity

(iv)ratios are a measure of the speed with which various accounts are converted into sales or cash.

- (a) Activity (b) Liquidity
- (c) Debt (d) Profitability

Answer (a) Activity

(v) The two basic measure of liquidity are

- (a) inventory turnover and current ratio
- (b) current ratio and liquid ratio
- (c) gross profit margin and operating ratio
- (d) current ratio and average collection period

Answer (b) Current ratio and liquid ratio

(vi) The.....is a measure of liquidity which excludes....., generally the least liquid asset.

- (a) current ratio, accounts debtors
- (b) liquid ratio, accounts debtors
- (c) current ratio, inventory
- (d) liquid ratio, inventory

Answer (d) Liquid ratio, inventory

DO IT YOURSELF II

Question 1. Calculate the amount of gross profit

Average stock = Rs.80,000

Stock turnover ratio = 6 times

Selling price = 25% above cost

Answer Average stock = ? 80,000

Stock Turnover Ratio = 6 times

Selling Price = 25% above cost

$$\text{STR} = \frac{\text{Cost of goods sold}}{\text{Average Stock}}; 6 = \frac{\text{COGS}}{80,000}$$

$$\text{COGS} = 80,000 \times 6 = ₹ 4,80,000$$

$$\text{Selling Price} = \text{COGS} + 25\% \text{ of COGS}$$

$$= 4,80,000 + \left(\frac{25}{100} \times 4,80,000 \right)$$

$$= 4,80,000 + 1,20,000 = ₹ 6,00,000$$

$$\text{Gross Profit} = \text{Selling Price} - \text{COGS}$$

$$= 6,00,000 - 4,80,000 ₹ = ₹ 1,20,000$$

Question 2. Calculate stock Turnover Ratio

Annual sales	=	₹ 2,00,000
Gross profit	=	20% on cost of Goods sold
Opening stock	=	₹ 38,500
Closing stock	=	₹ 41,500

Answer Annual Sales = ₹ 2,00,000

Gross Profit = 20% on cost

Opening Stock = ₹ 38,500

Closing Stock = ₹ 41,500

Let COGS = x

$$\text{then Gross Profit} = 20\% \text{ of } x; = \frac{20}{100} \times x = \frac{1}{5} \times x = \frac{x}{5}$$

Selling Price = COGS + GP

$$2,00,000 = \frac{x + x}{5}$$

$$2,00,000 = \frac{5x + x}{5}; 6x = 10,00,000$$

$$x = \frac{10,00,000}{6}; x = ₹ 1,66,667$$

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

$$= \frac{38,500 + 41,500}{2} = 40,000$$

$$\text{Stock Turnover Ratio} = \frac{\text{COGS}}{\text{Average Stock}} = \frac{1,66,667}{40,000} = 4.16 \text{ times}$$

TEST YOUR UNDERSTANDING III

(i) The.....is useful in evaluating credit and collection policies.

- (a) average payment period (b) current ratio
(c) average collection period (d) current asset turnover

Answer (c) Average collection period

(ii) The.....measures the activity of a firm's inventory.

- (a) average collection period (b) inventory turnover
(c) liquid ratio (d) current ratio

Answer (b) Inventory turnover

(iii) The.....ratio may indicate the firm is experiencing stock outs and lost sales.

- (a) average payment period (b) inventory turnover
(c) average collection period (d) quick

Answer (d) Quick

(iv) ABC Co extends credit terms of 45 days to its customer, its credit collection would be considered poor if its average collection period was

- (a) 30 days (b) 36 days

(c) 47 days (d) 57 days

Answer (c) 47 days

(v) are especially interested in the average payment period, since it provides them with a sense of the bill-paying patterns of the firm.

(a) Customers (b) Stockholders

(c) Lenders and suppliers (d) Borrowers and buyers

Answer (c) Lenders and suppliers

(vi) The..... ratios provide the information critical to the long-run operation of the firm

(a) liquidity (b) activity

(c) solvency (d) profitability

Answer (c) Solvency

SHORT ANSWER TYPE QUESTIONS

Question 1. What do you mean by Ratio Analysis?

Answer The ratio analysis is the most powerful tool of financial statement analysis. Ratios simply mean one number expressed in terms of another. A ratio is a statistical yardstick by means of which relationship between two or various figures can be compared or measured. Ratios can be found out by dividing one number by another number. Ratios show how one number is related to another.

Question 2. What are various types of ratios?

Answer Accounting ratios are classified in two ways Categories as follows

(i) Traditional Classification: Traditional ratios are those accounting ratios which are based on the Financial Statement like Trading and Profit and Loss Account and Balance Sheet. On the basis of accounts of financial statements, the Traditional Classification is further divided into the following categories

(a) Income Statement Ratios: like Gross Profit Ratio, etc.

(b) Balance Sheet Ratios: like Current Ratio, Debt Equity Ratio, etc.

(c) Composite Ratios :like Debtors Turnover Ratio, etc.

(ii) Functional Classification This classification of ratios is based on the functional need and the purpose for calculating ratio. The functional ratios are further divided into the following categories

(a) Liquidity Ratio: These ratios are calculated to determine short term solvency.

(b) Solvency Ratio :These ratios are calculated to determine long term solvency.

(c) Activity Ratio :These ratios are calculated for measuring the operational efficiency and efficacy of the operations. These ratios relate to sales or cost of goods sold.

(d) Profitability Ratio: These ratios are calculated to assess the

Question 3. What relationships will be established to study?

(a) Inventory Turnover (b) Debtor Turnover

(c) Payables Turnover (d) Working Capital Turnover

Answer (a) Inventory Turnover Ratio: This ratio is a relationship between the cost of goods sold during a particular period of time and the cost of average inventory during a particular period. It is expressed in number of times. Stock turnover ratio/inventory turnover ratio indicates the number of time the stock has been turned over during the period and evaluates the efficiency with which a firm is able to manage its inventory.

This ratio indicates whether investment in stock is within proper limit or not. The ratio is calculated by dividing the cost of goods sold by the amount of average stock at cost. The formula for calculating inventory turnover ratio is as follows

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

$$\text{Cost of Goods Sold} = \text{Opening Stock} + \text{Purchase} + \text{Direct Expenses} - \text{Closing Stock}$$

$$\text{Alternatively cost of Goods sold} = \text{Net Sales} - \text{Gross Profit}$$

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

(b)Debtor Turnover Ratio :Debtor turnover ratio or accounts receivable turnover ratio indicates the velocity of debt collection of a firm. In simple words it indicates the number of times average debtors (receivable) are turned over during a year. The formula for calculating Debtors turnover ratio is as follows

$$\text{Debtors Turnover Ratio} = \frac{\text{Net Credit Sales/Average Trade Debtors}}$$

(c)Creditors/Payables Turnover Ratio :It compares creditors with the total credit purchases. It signifies the credit period enjoyed by the firm in paying creditors. Accounts payable include both sundry creditors and bills payable. Same as debtor's turnover ratio, creditor's turnover ratio can be calculated in two forms, creditors' turnover ratio and average payment period. The following formula is used to calculate the creditors Turnover Ratio

$$\text{Creditors Turnover Ratio} = \frac{\text{Credit Purchase/Average Trade Creditors}}$$

(d)Working Capital Turnover Ratio Working capital turnover ratio indicates the velocity of the utilization of net working capital. This ratio represents the number of times the working capital is turned over in a year and is calculated as follows

$$\text{Working Capital Turnover Ratio} = \frac{\text{Cost of Sales/Net Working Capital}}$$

Question 4. Why would the inventory turnover ratio be more important when analysing a grocery store than an insurance company?

Answer Nature of business make inventory turnover ratio more important in case of a grocery store as compare to an insurance company. A grocery store is a trading concern involved in trading i.e., buying and selling of goods and in this regards it is obvious to maintain some inventory in stores. On the other hand, insurance company involved in service business and involved in delivering service there is no question of inventory because service is perishable in nature and cannot be stored. That's why inventory turnover ratio is more important in case of grocery store than an insurance company.

Question 5. The liquidity of a business firm is measured by its ability to satisfy its long term obligations as they become due? Comment.

Answer Yes it is true that the liquidity of a business firm is measured by its ability to pay its long term obligations as they become due. Here the long term obligation means payments of principal amount on the due date and payments of interests on the regular basis. For measuring the long term solvency of any business we calculate the following ratios.

Debt Equity Ratio: Debt equity ratio indicates the relationship between the external equities or outsiders funds and the internal equities or shareholders funds. It is also known as external internal equity ratio. It is determined to ascertain soundness of the long term financial policies of the company. Following formula is used to calculate debt to equity ratio

$$\text{Debt Equity Ratio} = \frac{\text{External Equities}}{\text{Shareholders' Funds}} \text{ Or } \frac{\text{Outsiders Funds}}{\text{Internal Equities}}$$

Proprietary Ratio/Total Assets to Debt Ratio: Total assets to Debt Ratio or Proprietary Ratio are a variant of the debt equity ratio. It is also known as equity ratio or net worth to total assets ratio. This ratio relates the shareholder's funds to total assets. Proprietary / Equity ratio indicates the long-term or future solvency position of the business. Formula of Proprietary/Equity Ratio

$$\text{Proprietary or Equity Ratio} = \frac{\text{Shareholders Funds}}{\text{Total Assets}}$$

Fixed Assets to Proprietor's Fund Ratio: Fixed assets to proprietor's fund ratio establish a relationship between fixed assets and shareholders' funds. The purpose of this ratio is to indicate the percentage of the owner's funds invested in fixed assets. The formula for calculating this ratio is as follows

$$\text{Fixed Assets to Proprietors Fund} = \frac{\text{Fixed Assets}}{\text{Proprietors Fund}}$$

Interest Coverage Ratio: This ratio deals only with servicing of return on loan as interest. This ratio depicts the relationship between amount of profit utilise for paying interest and amount of interest payable. A high Interest Coverage Ratio implies that the company can easily meet all its interest obligations out of its profit.

$$\text{Interest Coverage Ratio} = \frac{\text{Net Profit before Interest and Tax}}{\text{Interest on Long Term loans}}$$

Question 6. The average age of inventory is viewed as the average length of time inventory is held by the firm or as the average number of day's sales in inventory. Explain.

Answer Inventory Turnover Ratio This ratio is a relationship between the cost of goods sold during a particular period of time and the cost of average inventory during a particular period. It is expressed in number of times. Stock turnover ratio/inventory turnover ratio indicates the number of time the stock has been turned over during the period and evaluates the efficiency with which a firm is able to manage its inventory. The formula for calculating inventory turnover ratio is as follows

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

$$\text{Cost of Goods Sold} = \text{Opening Stock} + \text{Purchase} + \text{Direct Expenses} - \text{Closing Stock}$$

$$\text{Alternatively Cost of Goods Sold} = \text{Net Sales} - \text{Gross Profit}$$

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

From the above formula, it is clear that this ratio reveals the average length of time for which the inventory is held by the firm.

LONG ANSWER TYPE QUESTIONS

Question 1. Who are the users of financial ratio analysis? Explain the significance of ratio analysis to them.

Answer Financial ratios help their users to take various managerial decisions. In this context there are four categories of users who are interested in financial ratios. These are the management, investors, long term creditors and short term creditors. The significance of ratios to the above mentioned users is as follows

(i) Management : Management calculate ratios for taking various managerial decisions. Management is always interested in future growth of the organisation. In this regard management design various policy measures and draft future plans. Management wish to know how effectively the resources are being utilised consequently, they are interested in Activity Ratios and Profitability Ratios like Net Profit Ratio, Debtors Turnover Ratio, Fixed

Assets Turnover Ratios, etc. ‘

(ii) Equity Investors :The prime concern of investors before investing in shares is to ensure the security of their principle and return on investment. It is a well known fact that the security of the funds is directly related to the profitability and operational efficiency of the business. In this way they are interested in knowing Earnings per Share, Return on Investment and Return on Equity.

(iii) Long Term Creditors: Long term creditors are those creditors who provide funds for more than one year, so they are interested in long term solvency of the firm and in assessing the ability of the firm to pay interest on time. In this way they are interested in calculating Long term Solvency Ratios like, Debt-Equity Ratio, Proprietary Ratio, Total Assets to Debt Ratio, Interest Coverage Ratio, etc.

(iv) Short Term Creditors :Short term creditors are those creditors who provide financial assistance through short term credit (Generally less than one year). That’s why short-term creditors are interested in timely payment of their debts in short run. In this way they are always interested in Liquidity Ratios like, Current Ratio, Quick Ratios etc. These ratios reveal the current financial position of the business. It is always observed that short term obligations are paid through current assest.

Question 2. What are liquidity ratios? Discuss the importance of current and liquid ratio.

Answer Liquidity ratios are calculated to determine the short-term solvency of the business. Analysis of current position of liquid funds determines* the ability of the business to pay the amount due as per commitment to stakeholders. Included in this category are current ratio, Quick ratio and Cash Fund Ratios.

Current Ratio/Working Capital Ratio: This ratio establish relationship between current assets and current liabilities. The standard for this ratio is 2 : 1. It means a ratio 2 : 1 is considered favourable. It is calculated by dividing the total of the current assets by total of the current liabilities. The formula for the current ratio is as follows

Current Ratio = Current Assets/Current Liabilities Or

Current Assets : Current Liabilities

Importance of Current Ratio Current Ratio Provides a measure of degree to which current assets cover current liabilities. The excess of current assets over current liabilities provides a measure of safety margin available against uncertainty in realisation of current assets and flow of funds. However, it must be interpreted carefully because window-dressing is possible by manipulating the components of current assets and current liabilities, e.g., it can be manipulated by making payment to creditors. A very high current ratio is not a good sign as it reflects under utilisation or improper utilisation of resources.

Liquid/Acid Test/Quick Ratio This ratio establishes relationship between Quick assets and Current liabilities. Quick assets are those assets which can get converted into cash easily in case of emergency. Out of current assets it is believed that stock, and prepaid expenses are not possible to convert in cash quickly. The standard for this ratio is 1:1. It means if quick assets are just equal to the current liabilities they will be considered favourable with the view point of company’s credibility. The formula for the quick ratio is as follows

Current Ratio = Current Assets/Current Liabilities

Or

Current Assets : Current Liabilities

Importance of Current Ratio: Current Ratio Provides a measure of degree to which current assets cover current liabilities. The excess of current assets over current liabilities provides a measure of safety margin available against uncertainty in realisation of current assets and flow of funds. However, it must be interpreted carefully because window-dressing is possible by manipulating the components of current assets and current liabilities, e.g., it can be

manipulated by making payment to creditors. A very high current ratio is not a good sign as it reflects under utilisation or improper utilisation of resources.

Liquid/Acid Test/Quick Ratio: This ratio establishes relationship between Quick assets and Current liabilities. Quick assets are those assets which can get converted into cash easily in case of emergency. Out of current assets it is believed that stock, and prepaid expenses are not possible to convert in cash quickly. The standard for this ratio is 1:1. It means if quick assets are just equal to the current liabilities they will be considered favourable with the view point of company's credibility. The formula for the quick ratio is as follows

$$\begin{aligned} \text{Quick Ratio} &= \frac{\text{Quick Assets}}{\text{Current Liabilities}} \\ \text{Or} \\ \text{Quick Assets} &: \text{Current Liabilities} \\ \text{Quick assets} &= \text{Current assets} - \text{Stock} + \text{Prepaid Expenses} \end{aligned}$$

Importance of Quick Ratio : It helps in determining whether a firm has sufficient funds if it has to pay all its current liabilities immediately. Because of exclusion of non-liquid current assets, it is considered better than current ratio as a measure of liquidity position of the business. Standard for liquid ratio is 1:1. Sometimes quick ratio is calculated on the basis of quick liability instead of current liabilities. Quick liabilities are calculated by ignoring bank overdraft, if any. It means to get the figure of quick liabilities from current liabilities; bank overdraft is deducted from current liabilities.

Question 3. How would you study the solvency position of the firm?

Answer The solvency position of any firm is determined and measured with the help of solvency ratios. In this way we can say that the ratios which throw light on the debt servicing ability of the businesses in the long run are known as solvency ratios. Solvency of a concern can be measured in two ways first to check the security of Debt and second is to check the security of return on Debt. For calculating the security of debt we calculate Debt-Equity Ratio, Proprietary Ratio, Fixed Assets – Proprietary Fund Ratio, etc. And for calculating Security of Return on Debt we calculate Interest Coverage Ratio. A brief description of the above mentioned ratios is as follows

Debt Equity Ratio : Debt Equity Ratio indicates the relationship between the external equities or outsiders funds and the internal equities or shareholders funds. It is also known as external internal equity ratio. It is determined to ascertain soundness of the long term financial policies of the company.

$$\text{Debt Equity Ratio} = \frac{\text{External Equities}}{\text{Shareholder's Funds}} \text{ Or } \frac{\text{Outsiders Funds}}{\text{Internal Equities}}$$

Proprietary Ratio/ Total Assets to Debt Ratio: Total assets to Debt Ratio or Proprietary Ratio are a variant of the debt equity ratio. It is also known as equity ratio or net worth to total assets ratio. This ratio relates the shareholder's funds to total assets. Proprietary/Equity Ratio indicates the long-term or future solvency position of the business. Formula of Proprietary/Equity Ratio

$$\text{Proprietary or Equity Ratio} = \frac{\text{Shareholders Funds}}{\text{Total Assets}}$$

Shareholder's funds include equity share capital plus all reserves and surpluses items. Total assets include all assets, including Goodwill. Some authors exclude goodwill from total assets. In that case the total shareholder's funds are to be divided by total tangible assets. The total liabilities may also be used as the denominator in the above formula.

Fixed Assets to Proprietor's Fund Ratio: Fixed Assets to Proprietor's Fund Ratio establish a relationship between fixed assets and shareholders' funds. The purpose of this ratio is to

indicate the percentage of the owner's funds invested in fixed assets. The formula for calculating this ratio is as follows

$$\text{Fixed Assets to Proprietors Fund} = \frac{\text{Fixed Assets}}{\text{Proprietor's Fund}}$$

The fixed assets are considered at their book value and the proprietor's funds consist of the same items as internal equities in the case of debt equity ratio.

Interest Coverage Ratio :This ratio deals only with servicing of return on loan as interest. This ratio depicts the relationship between amount of profit utilise for paying interest and amount of interest payable. A high Interest Coverage Ratio implies that the company can easily meet all its interest obligations out of its profit.

$$\text{Interest Coverage Ratio} = \frac{\text{Net Profit before Interest and Tax}}{\text{Interest on Long Term Loans}}$$

Question 4. What are important profitability ratios? How are they worked out? '

Answer Profitability Ratios Profitability ratios measure the results of business operations or overall performance and effectiveness of the firm. Some of the most Important and popular profitability ratios are as under

Gross Profit Ratio: Gross Profit Ratio (GP ratio) is the ratio of gross profit to net sales expressed as a percentage. It expresses the relationship between gross profit and sales. The basic components for the calculation of gross profit ratio are gross profit and net sales. Net sales mean sales minus sales returns.

Gross profit would be the difference between net sales and cost of goods sold. Cost of goods sold in the case of a trading concern would be equal to opening stock plus purchase, minus closing stock plus all direct expenses relating to purchases. In the case of manufacturing concern, it would be equal to the sum of the cost of raw materials, wages, direct expenses and all manufacturing expenses. In other words, generally the expenses charged to profit and loss account or operating expenses are excluded from the calculation of cost of goods sold.

Following formula is used to calculate gross profit ratios

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

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

$$\text{Net Sales} = \text{Sales} - \text{Sales Return}$$

$$\text{Cost of Goods Sold} = \text{Opening Stock} + \text{Purchase} + \text{Direct Expenses} - \text{Closing Stock}$$

Net Profit Ratio :Net Profit Ratio is the ratio of net profit to net sales. It is expressed as percentage. The two basic components of the net profit ratio are the net profit and sales. The net profits are obtained after deducting income-tax and, generally, non-operating expenses and incomes are excluded from the net profits for calculating this ratio. Thus, incomes such as interest on investments outside the business, profit on sales of fixed assets and losses on sales of fixed assets, etc are excluded.

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

$$\text{Net Sales} = \text{Sales} - \text{Sales Return}$$

Operating Profit Ratio :Operating Profit Ratio is the ratio of operating profit to net sales. There are many non operating expenses and incomes included in the profit and loss account which has nothing to do with the operations of the business such as loss by fire, loss by theft etc. On the other had in credit side of the P&L account, there are so many incomes which can be considered as operating incomes such as dividend, bank interest, rent etc. In this way net profit ratio will not tell the truth about the profit of the organisation. Hence operating

profit ratio will be helpful in that case. The formula for calculating operating ratio is as follows

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

$$\text{Operating Profit} = \text{Net Profit} + \text{Non-operating Expenses} \\ - \text{Non-operating Incomes}$$

$$\text{Net Sales} = \text{Sales} - \text{Sales Return}$$

Operating Ratio : Operating ratio is the ratio of cost of goods sold plus operating expenses to net sales. It is generally expressed in percentage, Operating ratio measures the cost of operations per dollar of sales. This is closely related to the ratio of operating profit to net sales. The two basic components for the calculation of operating ratio are operating cost (cost of goods sold plus operating expenses) and net sales. Operating expenses normally include (a) administrative and office expenses and (b) selling and distribution expenses. The formula for calculating the operating ratio is as follows

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

$$\text{Cost of Goods Sold} = \text{Opening Stock} + \text{Purchase} + \text{Direct Expenses} \\ - \text{Closing Stock}$$

$$\text{Net Sales} = \text{Sales} - \text{Sales Return}$$

Question 5. Financial ratio analysis are conducted by four groups of analysts : managers, equity investors, long term creditors and short term creditors. What is the primary emphasis of each of these groups in evaluating ratios?

Answer This is very much true that the financial ratio analysis is conducted by four groups of analysts : managers, equity investors, long term creditors and short term creditors. The primary emphasis of each of these groups in evaluating these ratios are as follows

(i) Management: Management calculate ratios for taking various managerial decisions. Management is always interested in future growth of the organisation. In this regard management design various policy measures and draft future plans. Management wish to know how effectively the resources are being utilised Consequently, they are interested in Activity Ratios and Profitability Ratios like Net Profit Ratio, Debtors Turnover Ratio, Fixed Assets Turnover Ratios, etc.

(ii) Equity Investors: The prime concern of investors before investing in shares is to ensure the security of their principle and return on investment. It is a well known fact that the security of the funds is directly related to the profitability and operational efficiency of the business. In this way they are interested in knowing Earnings per Share, Return on Investment and Return on Equity.

(iii) Long Term Creditors: Long term creditors are those creditors who provide funds for more than one year, so they are interested in long term solvency of the firm and in assessing the ability of the firm to pay interest on time. In this way they are interested in calculating Long term Solvency Ratios like, Debt-Equity Ratio, Proprietary Ratio, Total Assets to Debt Ratio, Interest Coverage Ratio, etc.

(iv) Short Term Creditors: Short term creditors are those creditors who provide financial assistance through short term credit (Generally less than one year). That's why short term creditors are interested in timely payment of their debts in short run. In this way, they are always interested in Liquidity Ratios like, Current Ratio, Quick Ratios etc. These ratios reveal the current financial position of the business. It is always observed that short term obligations are paid through current assest.

Question 6. The current ratio provides a better measure of overall liquidity only when a firm's inventory cannot easily be converted into cash. If inventory is liquid, the quick ratio is a preferred measure of overall liquidity. Explain.

Answer The above mentioned statement is true. There are two different ways to measure the

liquidity of a firm first through current ratio of the firm and second through quick ratio of the firm. The second one is considered the more refined form of measuring the liquidity of the firm. The current ratio 'explains the relationship between current assets and current liabilities. If current assets are quite capable to pay the current liability the liquidity of the concerned firm will be considered good. But here generally one question arises there are certain assets which cannot be converted into cash quickly such as stock and prepaid expenses.

As far as the matter of prepaid expenses is concerned it's ok but what about the stock if we measure the liquidity on the basis of conversion of current assets in cash there are many firms where conversion of stock is not possible into cash frequently say e.g., heavy machinery manufacturing companies, locomotive companies, etc. This is because, the heavy stocks like machinery, heavy tools etc. cannot be easily sold off. In this case it is always advisable to follow the current ratio for measuring the liquidity of a firm.

But on the other hand, in case of those firms where the stock can be easily realised or sold off consideration of stock should be avoided and to measure the liquidity of that firm Quick ratio should be calculated, e.g., the inventories of a service sector company are very liquid as there are no stocks kept for sale, so in that case liquid ratio must be followed for measuring the liquidity of the firm.

We can understand from the above mentioned statement in the light of another example where stock contribute the major portion in current assets in that case to find out the liquidity of that firm stock cannot be avoided to measure the liquidity of the firm. On the other hand where stock contributes a reasonably less amount it can be avoided and liquidity of that firm can be measured with the help of quick ratio. On the other hand where there is a lot of fluctuation in the price of stock it is always advisable to compute quick ratio and avoid the stock figure because it will reduce the authenticity of liquidity measure.

NUMERICAL QUESTIONS

Question 1. Following is the Balance Sheet of Rohit and Company as on March 31, 2006.

Liabilities	Amt. (₹)	Assets	Amt. (₹)
Share Capital	1,90,000	Fixed Assets	1,53,000
Reserves	12,500	Stock	55,800
Profit and Loss	22,500	Debtors	28,800
Bills Payables	18,000	Cash at Bank	59,400
Creditors	54,000		
	2,97,000		2,97,000

Calculate Current Ratio.

Answer

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

$$\begin{aligned} \text{Current Assets} &= \text{Stock} + \text{Debtors} + \text{Cash at Bank} \\ &= 55,800 + 28,800 + 59,400 \\ &= ₹ 1,44,000 \end{aligned}$$

$$\begin{aligned} \text{Current Liabilities} &= \text{Bill Payable} + \text{Creditors} \\ &= 18,000 + 54,000 \\ &= ₹ 72,000 \end{aligned}$$

$$\text{Current Ratio} = \frac{1,44,000}{72,000} = \frac{2}{1} = 2:1$$

Question 2. Following is the Balance Sheet of Title Machine Limited as on March 31, 2006.

Liabilities	Amt. (₹)	Assets	Amt. (₹)
Equity Share Capital	24,000	Buildings	45,000
8% Debentures	9,000	Stock	12,000
Profit and Loss	6,000	Debtors	9,000
Bank Overdraft	6,000	Cash in Hand	2,280
Creditor	23,400	Prepaid Expenses	720
Provision for Taxation	600		
	69,000		69,000

Calculate Current Ratio and Liquid Ratio.

Answer

$$\begin{aligned} \text{Current Assets} &= \text{Stock} + \text{Debtors} + \text{Cash in Hand} \\ &\quad + \text{Prepaid Expenses} \\ &= 12,000 + 9,000 + 2,280 + 720 \\ &= 24,000 \\ \text{Current Liabilities} &= \text{Bank Overdraft} + \text{Creditors} \\ &\quad + \text{Provision for Taxation} \\ &= 6,000 + 23,400 + 600 \\ &= 30,000 \\ \text{Current Ratio} &= \frac{24,000}{30,000} = \frac{4}{5} = 0.8:1 \\ \text{Liquid Ratio} &= \frac{\text{Liquid Assets}}{\text{Current Liabilities}} \\ \text{Liquid Assets} &= \text{Current Assets} \\ &\quad - (\text{Stock} + \text{Prepaid Expenses}) \\ &= 24,000 - 12,720 = ₹ 11,280 \\ \text{Liquid Ratio} &= \frac{11,280}{30,000} = \frac{0.376}{1} = 0.376:1 \end{aligned}$$

Question 3. Current Ratio is 3:5 Working Capital is Rs. 9,00,000. Calculate the amount of Current Assets and Current Liabilities.

Answer

$$\begin{aligned} \text{Working Capital} &= \text{Current Assets} - \text{Current Liabilities} \\ \text{Working Capital} &= 9,00,000 \\ \text{Current Ratio} = 3:5 &= \frac{0.6}{1} = \frac{\text{Current Assets}}{\text{Current Liabilities}} \end{aligned}$$

or

$$1 \text{ Current Assets} = 0.6 \text{ Current Liabilities}$$

Note :According to the ratio, current asset is less than current liability hence working capital should be negative. To match the figures and answer of the question current ratio is taken as 3.5 : 1 and working capital ? 90,000.

Let current liabilities be x.

$$\begin{aligned} \text{then current assets} &= 3.5x \\ \text{Working Capital} &= \text{Current Assets} - \text{Current Liabilities} \\ 90,000 &= 3.5x - x \\ 90,000 &= 2.5x; x = \frac{90,000}{2.5} \\ x &= 36,000 = \text{Current Liabilities} \\ \text{Current Assets} &= 3.5x = 3.5 \times 36,000 = ₹ 1,26,000 \end{aligned}$$

Question 4. Shine Limited has a current ratio 4.5:1 and quick ratio 3:1; if the stock is 36,000, calculate current liabilities and current assets.

Answer Current Ratio = 4.5:1
 Quick Ratio = 3:1
 Let current liabilities = x
 then current assets = 4.5x
 and quick assets = 3x
 Stock = Current Assets – Quick Assets
 $36,000 = 4.5x - 3x$
 $36,000 = 1.5x$
 $x = \frac{36,000}{1.5} = 24,000 = \text{Current Liabilities}$
 Current Assets = $4.5x = 4.5 \times 24,000$
 $= ₹ 1,08,000$

Question 5. Current liabilities of a company are Rs. 75,000. If Current ratio is 4 : 1 and liquid ratio is 1:1, calculate value of current assets, liquid assets and stock.

Answer Current Ratio = 4:1
 Liquid Ratio = 1 :1
 Current Liabilities = 75,000
 Current assets = 4 times current liabilities
 $= 4 \times 75,000 = 3,00,000$
 Liquid Assets = Current Liabilities = 75,000
 Stock = Current Assets – Liquid Assets
 $= 3,00,000 - 75,000 = ₹ 2,25,000$

Question 6. Handa Limited has stock of Rs. 20,000. Total liquid assets are Rs. 1,00,000 and quick ratio is 2:1 Calculate current ratio.

Answer Quick Ratio = 2:1
 Let Current Liabilities = x
 Then Quick Assets = 2x or $1,00,000 = 2x$; $x = \frac{1,00,000}{2} = 50,000$
 Current Assets = Quick Assets + Stock
 $= 1,00,000 + 20,000 = 1,20,000$
 Current Ratio = $\frac{1,20,000}{50,000} = 2.4:1$

Question 7. Calculate debt equity ratio from the following information

Items	(₹)
Total Assets	15,00,000
Current Liabilities	6,00,000
Total Debts	12,00,000

Answer Debt Equity Ratio = $\frac{\text{Debt}}{\text{Equity}}$
 Equity = Total Assets – Total Debts
 $= 15,00,000 - 12,00,000 = 3,00,000$
 Debt = Total Debt – Current Liabilities
 $= 12,00,000 - 6,00,000 = 6,00,000$
 Debt Equity Ratio = $\frac{6,00,000}{3,00,000} = 2:1$

Question 8. Calculate Current Ratio if Stock is ₹ 6,00,000; Liquid Assets Rs. 24,00,000; Quick Ratio 2:1.

Answer Quick Ratio = 2:1

Let Current Liability = x

then Quick Assets = 2x

or $24,00,000 = 2x$

$$x = \frac{24,00,000}{2} = 12,00,000 = \text{Current Liability}$$

Current Assets = Quick Assets + Stock

$$= 24,00,000 + 6,00,000$$

$$= 30,00,000$$

$$\text{Current Ratio} = \frac{30,00,000}{12,00,000} = 2.5 : 1$$

Question 9. Compute Stock Turnover Ratio from the following information

Items	(₹)
Net Sales	2,00,000
Gross Profit	50,000
Closing Stock	60,000
Excess of Closing Stock over Opening Stock	20,000

Answer (i) Stock Turnover Ratio = $\frac{\text{Cost of Goods Sold}}{\text{Average Stock}}$

Cost of Goods Sold = Net sale – Gross Profit

$$= 2,00,000 - 50,000 = ₹ 1,50,000$$

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

Opening Stock = Closing Stock – 20,000

$$= 60,000 - 20,000$$

$$= 40,000$$

$$\text{Average Stock} = \frac{40,000 + 60,000}{2} = \frac{1,00,000}{2}$$

$$= ₹ 50,000$$

$$\text{Stock Turnover Ratio} = \frac{1,50,000}{50,000} = 3 \text{ times}$$

Question 10. Calculate following ratios from the following information

(i) Current ratio (ii) Acid test ratio

(iii) Operating Ratio (iv) Gross Profit Ratio

Items	(₹)
Current Assets	35,000
Current Liabilities	17,500
Stock	15,000
Operating Expenses	20,000
Sales	60,000
Cost of Goods Sold	30,000

$$\text{Answer (i) Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}} = \frac{35,000}{17,500} = \frac{2}{1} = 2:1$$

$$\text{(ii) Acid Test Ratio} = \frac{\text{Liquid Assets}}{\text{Current Liabilities}}$$

$$\text{Liquid Assets} = \text{Current Assets} - \text{Stock}$$

$$= 35,000 - 15,000 = ₹ 20,000$$

$$\text{Acid Test Ratio} = \frac{20,000}{17,500} = \frac{1.14}{1} = 1.14 : 1$$

$$\text{(iii) Operating Ratio} = \frac{\text{Cost of Goods Sold} + \text{Operating Expenses}}{\text{Net Sales}} \times 100$$

$$= \frac{30,000 + 20,000}{60,000} \times 100 = \frac{50,000}{60,000} \times 100$$

$$= 83.3\%$$

$$\text{(iv) Gross Profit Ratio} = \frac{\text{Gross Profit}}{\text{Net Sales}} \times 100$$

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

$$= 60,000 - 30,000 = ₹ 30,000$$

$$\text{Gross Profit Ratio} = \frac{30,000}{60,000} \times 100 = \frac{300}{6} = 50\%$$

Note (i) Acid test ratio, quick ratio and liquid ratio are one and the same.

(ii) Students mostly get confused in operating ratio and operating profit ratio, so be careful while doing these ratios.

Question 11. From the following information calculate

- (i) Gross Profit Ratio (ii) Inventory Turnover Ratio (iii) Current Ratio (iv) Liquid Ratio
(v) Net Profit Ratio (vi) Working Capital Ratio

Items	(₹)
Sales	25,20,000
Net Profit	3,60,000
Cost of Sales	19,20,000
Long Term Debts	9,00,000
Creditors	2,00,000
Average Inventory	8,00,000
Current Assets	7,60,000
Fixed Assets	14,40,000
Current Liabilities	6,00,000
Net Profit before Interest and Tax	8,00,000

$$\text{Answer (i) Gross Profit} = \text{Sales} - \text{Cost of Goods Sold}$$

$$= 25,20,000 - 19,20,000 = 6,00,000$$

$$\text{Gross Profit Ratio} = \frac{6,00,000}{25,20,000} \times 100 = 23.81\%$$

$$\text{(ii) Inventory Turnover Ratio} = \frac{\text{Cost of Goods Sold}}{\text{Average Stock}}$$

$$= \frac{19,20,000}{8,00,000} = 2.4 \text{ times.}$$

$$\text{(iii) Current Ratio} = \frac{\text{Total Current Assets}}{\text{Current Liabilities}} = \frac{7,60,000 + 8,00,000}{6,00,000}$$

$$= \frac{15,60,000}{6,00,000} = \frac{2.6}{1} = 2.6:1$$

Note :In this question stock is given separately from current assets, hence* it is added to make total current assets.

$$\text{(iv) Liquid Ratio} = \frac{\text{Liquid Assets}}{\text{Current Liabilities}} = \frac{7,60,000}{6,00,000} = \frac{1.27}{1} = 1.27:1$$

$$\text{(v) Net Profit Ratio} = \frac{\text{Net Profit}}{\text{Net Sales}} \times 100 = \frac{3,60,000}{25,20,000} \times 100 = 14.28\%$$

$$\text{(vi) Working Capital Ratio} = \frac{\text{Net Sales}}{\text{Working Capital}}$$

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

$$= 15,60,000 - 6,00,000 = 9,60,000$$

$$\text{Working Capital Ratio} = \frac{25,20,000}{9,60,000} = 2.625 \text{ times}$$

Note : In this question current assets should be considered as other current asset and stock is separate, in other words, other current assets means liquid assets. Working capital ratio and working capital turnover ratio means same.

Question 12. Compute Gross Profit Ratio, Working Capital Turnover Ratio, Debt Equity Ratio and Proprietary Ratio from the following information

Items	(₹)
Paid-up Capital	5,00,000
Current Assets	4,00,000
Net Sales	10,00,000
13% Debentures	2,00,000
Current Liability	2,80,000
Cost of Goods Sold	6,00,000

Answer (i) Gross Profit Ratio = $\frac{\text{Gross Profit}}{\text{Net Sales}} \times 100$

$$\begin{aligned} \text{Gross Profit} &= \text{Net Sales} - \text{Cost of Goods Sold} \\ &= 10,00,000 - 6,00,000 = 4,00,000 \end{aligned}$$

$$\text{Gross Profit Ratio} = \frac{4,00,000}{10,00,000} \times 100 = 40\%$$

(ii) Working Capital Turnover Ratio = $\frac{\text{Net Sales}}{\text{Working Capital}}$

$$\begin{aligned} \text{Working Capital} &= \text{Current Assets} - \text{Current Liabilities} \\ &= 4,00,000 - 2,80,000 = 1,20,000 \end{aligned}$$

$$\text{Working Capital Turnover Ratio} = \frac{10,00,000}{1,20,000} = 8.33 \text{ times}$$

(iii) Debt Equity Ratio = $\frac{\text{Debt}}{\text{Equity}} = \frac{2,00,000}{5,00,000} = 2:5 = 0.4:1$

(iv) Proprietary Ratio = $\frac{\text{Shareholders Funds}}{\text{Total Assets}}$

$$\text{Total Assets} = \text{Total Liabilities}$$

$$\text{Total Liabilities} = \text{Paid up Capital} + \text{Debentures}$$

$$+ \text{Current Liabilities}$$

$$= 5,00,000 + 2,00,000 + 2,80,000 = 9,80,000$$

$$\text{Proprietary Ratio} = \frac{5,00,000}{9,80,000} = 25:49 = 0.51:1$$

Question 13. Calculate Stock Turnover Ratio if Opening Stock is Rs. 76,250, Closing Stock is 98,500, Sales is Rs. 5,20,000, Sales Return is Rs.20,000, Purchase is Rs. 3,22,250.

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

$$\text{Cost of Goods Sold} = \text{Opening Stock} + \text{Purchase} - \text{Closing Stock}$$

$$= 76,250 + 3,22,250 - 98,500$$

$$= 3,00,000$$

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

$$= \frac{76,250 + 98,500}{2} = 87,375$$

$$\text{Stock Turnover Ratio} = \frac{3,00,000}{87,375} = 3.43 \text{ times}$$

Question 14. Calculate Stock Turnover Ratio from the data given below

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

$$\begin{aligned} \text{Cost of Goods Sold} &= \text{Opening Stock} + \text{Purchases} + \text{Carriage} \\ &\quad - \text{Closing Stock} \\ &= 10,000 + 25,000 + 2,500 - 5,000 \\ &= 32,500 \\ \text{Average Stock} &= \frac{\text{Opening Stock} + \text{Closing Stock}}{2} \\ &= \frac{10,000 + 5,000}{2} \\ &= \frac{15,000}{2} = 7,500 \\ \text{Stock Turnover Ratio} &= \frac{32,500}{7,500} = 4.33 \text{ times} \end{aligned}$$

Question 15. A trading firm's average stock is ₹ 20,000 (cost). If the stock turnover ratio is 8 times and the firm sets goods at a profit of 20% on sales, ascertain the profit of the firm.

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

$$8 = \frac{\text{Cost of Goods Sold}}{20,000}$$

Cost of Goods sold = $20,000 \times 8$
= 1,60,000

Let sale price be ₹ 100, then profit is ₹ 20.
Hence, the Cost of Goods Sold = ₹ 100 - ₹ 20 = ₹ 80
If the Cost of Goods Sold is ₹ 80, then Sales = 100
If the Cost of Goods Sold is ₹ 1, then Sales = $\frac{100}{80}$

If the Cost of Goods Sold is 1,60,000 then Sales = $\frac{100}{80} \times 1,60,000$
= ₹ 2,00,000

Profit = Sales - Cost of Goods Sold
= 2,00,000 - 1,60,000 = ₹ 40,000

Alternative Method

$$\begin{aligned} \text{Stock Turnover Ratio} &= \frac{\text{Cost of Goods Sold}}{\text{Average Stock}} \\ 8 &= \frac{\text{Cost of Goods Sold}}{20,000} \end{aligned}$$

Cost of Goods Sold = $20,000 \times 8 = 1,60,000$

Assume Sales as x then
Cost of Goods Sold = Net Sales - Profit on Sale

or $1,60,000 = x - 20\% \text{ of } x$
or $1,60,000 = x - \frac{20}{100}x$
or $1,60,000 = \frac{100x - 20x}{100}$ or $1,60,000 = \frac{80x}{100}$
or $x = \frac{1,60,000 \times 100}{80} = ₹ 2,00,000$

Profit = Sales - Cost of Goods Sold
= 2,00,000 - 1,60,000 = ₹ 40,000

Question 16. You are able to collect the following information about a company for two years

Items	2004	2005
Book Debts on April 1	₹ 4,00,000	₹ 5,00,000
Book Debts on March 30		₹ 5,60,000
Stock in trade on March 31	₹ 6,00,000	₹ 9,00,000
Sales (at gross profit of 25%)	₹ 3,00,000	₹ 24,00,000

Calculate Stock Turnover Ratio and Debtor Turnover Ratio if in the year 2004 stock in trade increased by Rs. 2,00,000.

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

Cost of Goods Sold = Sales – Gross Profit

Gross Profit = 25% of sales

= $\frac{25}{100} \times 24,00,000 = 6,00,000$

Cost of Goods Sold = 24,00,000 – 6,00,000

= 18,00,000

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

= $\frac{6,00,000 + 9,00,000}{2}$

= $\frac{15,00,000}{2} = 7,50,000$

Stock Turnover Ratio = $\frac{18,00,000}{7,50,000} = 2.4$ times

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

Average Debtors = $\frac{\text{Opening Debtors} + \text{Closing Debtors}}{2}$

= $\frac{5,00,000 + 5,60,000}{2}$

= $\frac{10,60,000}{2} = 5,30,000$

Debtors Turnover Ratio = $\frac{24,00,000}{5,30,000} = 4.53$ times

Note Total sales are considered as credit sales.

Question 17. The following Balance Sheet and other information, calculate following ratios

(i) Debt Equity Ratio (ii) Working Capital Turnover Ratio

(iii) Debtors Turnover Ratio

Liabilities	Amt. (₹)	Assets	Amt. (₹)
General Reserve	80,000	Preliminary Expenses	20,000
Profit and Loss	1,20,000	Cash	1,00,000
Loan @ 15%	2,40,000	Stock	80,000
Bills Payable	20,000	Bills Receivables	40,000
Creditors	80,000	Debtors	1,40,000
Share Capital	2,00,000	Fixed Assets	3,60,000
	7,40,000		7,40,000

Answer

(i) Debt Equity Ratio = $\frac{\text{Debt}}{\text{Equity}}$

Equity = Share Capital + General Reserve + Profit and Loss

– Preliminary Expenses

= 2,00,000 + 80,000 + 1,20,000 – 20,000

= 3,80,000

Debt = 15% Loan = 2,40,000

Debt Equity Ratio = $\frac{2,40,000}{3,80,000} = 12:19$

(ii) Working Capital Turnover Ratio = $\frac{\text{Net Sales}}{\text{Working Capital}}$

(iii) Debtors Turnover Ratio = $\frac{\text{Net Credit Sales}}{\text{Average Debtors}}$

Note (ii) and (iii) ratio cannot be calculated as no information about sales is given in question.

Question 18. The following is the summarised Profit and Loss account and the Balance Sheet of Nigam Limited for the year ended March 31, 2007

Expenses/Losses	Amt. (₹)	Revenue/Gains	Amt. (₹)
Opening Stock	50,000	Sales	4,00,000
Purchase	2,00,000	Closing Stock	60,000
Direct Expenses	16,000		
Gross Profit	1,94,000		
	4,60,000		4,60,000
Salary	48,000	Gross Profit	1,94,000
Loss on Sale of Furniture	6,000		
Net Profit	1,40,000		
	1,94,000		1,94,000

Balance Sheet of Nigam Limited
as on March 31, 2007

Liabilities	Amt. (₹)	Assets	Amt. (₹)
Profit and Loss	1,40,000	Stock	60,000
Creditors	1,90,000	Land	4,00,000
Equity Share Capital	2,00,000	Cash	40,000
Outstanding Expenses	70,000	Debtors	1,00,000
	6,00,000		6,00,000

Calculate

(i) Quick Ratio

(ii) Stock Turnover Ratio

(iii) Return on Investment

Answer (i) $\text{Quick Ratio} = \frac{\text{Quick Assets}}{\text{Current Liabilities}}$

$$\begin{aligned} \text{Quick Assets} &= \text{Cash} + \text{Debtors} \\ &= 40,000 + 1,00,000 = 1,40,000 \end{aligned}$$

$$\begin{aligned} \text{Current Liabilities} &= \text{Creditors} + \text{Outstanding Expenses} \\ &= 1,90,000 + 70,000 \\ &= 2,60,000 \end{aligned}$$

$$\text{Quick Ratio} = \frac{1,40,000}{2,60,000} = 7:13 = 0.54:1$$

(ii) $\text{Stock Turnover Ratio} = \frac{\text{Cost of Goods Sold}}{\text{Average Stock}}$

$$\begin{aligned} \text{Cost of Goods Sold} &= \text{Sales} - \text{Gross Profit} \\ &= 4,00,000 - 1,94,000 \\ &= 2,06,000 \end{aligned}$$

$$\begin{aligned} \text{Average Stock} &= \frac{\text{Opening Stock} + \text{Closing Stock}}{2} \\ &= \frac{50,000 + 60,000}{2} \\ &= \frac{1,10,000}{2} \end{aligned}$$

$$\begin{aligned} \text{Stock Turnover Ratio} &= \frac{2,06,000}{55,000} \\ &= 3.74 \text{ times} \end{aligned}$$

(iii) $\text{Return on Investment} = \frac{\text{Profit before Interest and Tax}}{\text{Capital Employed}} \times 100$

$$\begin{aligned} \text{Capital Employed} &= \text{Equity Share Capital} + \text{Profit and Loss} \\ &= 2,00,000 + 1,40,000 \\ &= 3,40,000 \end{aligned}$$

$$\begin{aligned} \text{Return on Investment} &= \frac{1,40,000}{3,40,000} \times 100 \\ &= 41.17\% \end{aligned}$$

Question 19. From the following,

Calculate

(a) Debt Equity Ratio (b) Total Assets to Debt Ratio (c) Proprietary Ratio.

Items	(₹)
Equity Share Capital	75,000
Preference Share Capital	25,000
General Reserve	50,000
Accumulated Profits	30,000
Debentures	75,000
Sundry Creditors	40,000
Outstanding Expenses	10,000
Preliminary Expenses to be written-off	5,000

Answer (a) **Debt Equity Ratio** = $\frac{\text{Debt}}{\text{Equity}}$

Equity/Shareholders Funds = Equity Share Capital + Preference Share Capital + General Reserve + Accumulated Profit – Preliminary Expenses Written off

$$= 75,000 + 25,000 + 50,000 + 30,000 - 5,000 = 1,75,000$$

$$\text{Debt} = \text{Debentures} = 75,000$$

$$\text{Debt Equity Ratio} = \frac{75,000}{1,75,000} = \frac{3}{7} = 3:7 \text{ or } .43 : 1$$

(b) **Total Assets to Debt Ratio** = $\frac{\text{Total Assets}}{\text{Debt}}$

Total Assets = Total Liabilities

Total Liabilities = Equity Share Capital + Preference Share Capital + General Reserve + Accumulated Profits + Debentures + Sundry Creditors + Outstanding Expenses – Preliminary Expenses to be written off

$$= 75,000 + 25,000 + 50,000 + 30,000 + 75,000$$

$$+ 40,000 + 10,000 - 5,000$$

$$= 3,00,000$$

$$\text{Total Assets to Debt Ratio} = \frac{3,00,000}{75,000} = 4:1$$

(c) **Proprietary Ratio** = $\frac{\text{Shareholder Funds}}{\text{Net Assets}}$

$$= \frac{1,75,000}{3,00,000} = \frac{7}{12} = 7:12$$

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Question 20. Cost of Goods Sold is 1,50,000 Operating expenses are Rs. 60,000. Sales is Rs. 2,60,000 and Sales Return is Rs. 10,000. Calculate Operating Ratio.

Answer Operating Ratio

$$= \frac{(\text{Cost of Goods Sold} + \text{Operating Expenses})}{\text{Net Sales}} \times 100$$

Net Sales = Sales – Sales Return

$$= 2,60,000 - 10,000 = 2,50,000$$

$$\text{Operating Ratio} = \frac{(1,50,000 + 60,000)}{2,50,000} \times 100$$

$$= \frac{2,10,000}{2,50,000} \times 100 = 84\%$$

Question 21. The following is the summarised transactions and Profit and Loss Account for the year ending March 31, 2007 and the Balance Sheet as on that date.

Expenses/ Losses	Amt. (₹)	Revenue/Gains	Amt. (₹)
Opening Stock	5,000	Sales	50,000
Purchase	25,000	Closing Stock	7,500
Direct Expenses	2,500		
Gross Profit	25,000		
	57,500		57,500
Administrative Expenses	7,500	Gross Profit	25,000
Interest	1,500		
Selling Expenses	6,000		
Net profit	10,000		
	25,000		25,000

Balance Sheet

Liabilities	Amt. (₹)	Assets	Amt. (₹)
Share Capital	50,000	Land and Building	25,000
Current Liabilities	20,000	Plant and Machinery	15,000
Profit and Loss	10,000	Stock	7,500
		Sundry Debtors	7,500
		Bills Receivables	6,250
		Cash in Hand and at Bank	8,750
		Furniture	10,000
	80,000		80,000

Calculate (i) Gross Profit Ratio (ii) Current Ratio (iii) Acid Test Ratio (iv) Stock Turnover Ratio (v) Fixed Assets Turnover Ratio.

Answer (i) Gross Profit Ratio = $\frac{\text{Gross Profit}}{\text{Net sales}} \times 100$
 $= \frac{25,000}{50,000} \times 100 = 50\%$

(ii) **Current Ratio** = $\frac{\text{Current Assets}}{\text{Current Liabilities}}$
 Current Assets = Stock + Sundry Debtors + Bills Receivable + Cash in hand and at Bank
 $= 7,500 + 7,500 + 6,250 + 8,750$
 $= 30,000$
 Current Ratio = $\frac{30,000}{20,000} = \frac{3}{2}$ or 1.5 : 1

(iii) **Acid Test Ratio** = $\frac{\text{Liquid Assets}}{\text{Current Liabilities}}$
 Liquid Assets = Current Assets – Stock
 $= 30,000 - 7,500$
 $= 22,500$
 Acid Test Ratio = $\frac{22,500}{20,000} = \frac{9}{8}$ or 1.12 : 1

(iv) **Stock Turnover Ratio** = $\frac{\text{Cost of Goods Sold}}{\text{Average Stock}}$
 Cost of Goods sold = Opening Stock + Purchase + Direct Expenses – Closing Stock
 $= 5,000 + 25,000 + 2,500 - 7,500$
 $= 25,000$
 Average Stock = $\frac{\text{Opening Stock} + \text{Closing Stock}}{2}$
 $= \frac{5,000 + 7,500}{2} = \frac{12,500}{2} = 6,250$
 Stock Turnover Ratio = $\frac{25,000}{6,250} = 4$ times

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

$$\begin{aligned} \text{Net Fixed Assets} &= \text{Land and Building} + \text{Plant and Machinery} \\ &\quad + \text{Furniture} \\ &= 25,000 + 15,000 + 10,000 = 50,000 \end{aligned}$$

$$\text{Fixed Assets Turnover Ratio} = \frac{50,000}{50,000} = 1:1$$

Question 22. From the following information calculate Gross Profit Ratio, Stock Turnover Ratio and Debtors Turnover Ratio.

Items	(₹)
Sales	3,00,000
Cost of Goods Sold	2,40,000
Closing Stock	62,000
Gross Profit	60,000
Opening Stock	58,000
Debtors	32,000

Answer (i) $\text{Gross Profit Ratio} = \frac{\text{Gross Profit}}{\text{Sales}} \times 100$

$$\begin{aligned} \text{Gross Profit} &= \text{Sales} - \text{Cost of Goods Sold} \\ &= 3,00,000 - 2,40,000 \\ &= 60,000 \end{aligned}$$

$$\text{Gross Profit Ratio} = \frac{60,000}{3,00,000} \times 100 = 20\%$$

(ii) $\text{Stock Turnover Ratio} = \frac{\text{Cost of Goods Sold}}{\text{Average Stock}}$

$$\begin{aligned} \text{Average Stock} &= \frac{\text{Opening Stock} + \text{Closing Stock}}{2} \\ &= \frac{58,000 + 62,000}{2} = \frac{1,20,000}{2} = 60,000 \end{aligned}$$

$$\text{Stock Turnover Ratio} = \frac{2,40,000}{60,000} = 4 \text{ times}$$

(iii) $\text{Debtors Turnover Ratio} = \frac{\text{Net Sales}}{\text{Average Debtors}}$

$$= \frac{3,00,000}{32,000} = 9.375 \text{ times}$$