Analysis of Financial Statements

CHAPTER – 13

ACCOUNTING RATIOS

Meaning of Ratio-Analysis:

Ratio analysis is the most important and popular tool of financial analysis. It is a combination of two terms 'ratio' and 'analysis. A 'ratio' is an arithmetic expression of the relationship between two variables. Two variables must be significantly related to producing meaningful results. 'Accounting Ratios' are computed by taking data from the financial statements of business entities and express the relationship between two financial variables from the financial statements.

The accounting ratio provides a quantitative relationship that the analyst may use to make a qualitative judgment about various aspects of the financial position and performance of an enterprise.

→ **Pure or in Proportion**: In this, the relationship between two items is directly expressed in proportion.

→ **Percentage**: In this, a quotient obtained by dividing one figure by another is multiplied by 100 and it becomes the 'percentage' form of expression.

→ **Time**: It is expressed a number of times a particular figure is compared to another figure.

→**Fraction**: It is expressed infraction. For example, net profit is 1/4th of sales.

Cross -sectional and Time-series Analysis

(i) Cross-sectional Analysis - It involves the comparison of the firm's ratios with some selected firms in the same industry or industry average at the same point of time. This analysis is used to provide conclusive evidence of the existence of the problem and which, in turn, will help the firm to initiate corrective actions. Such a comparison is helpful in assessing the relative financial position and performance of the firm. The other firms selected for comparison must have a common variable of similarity. The similarity may be of raw material consumption, production process or end product. A firm can easily resort to cross-sectional analysis, as it is not difficult to get the published financial statements of the similar firm.

(ii) Time-series Analysis - When ratios of the same firm over a period of time are compared, it is known as time series or trend analysis. This analysis given an indication of direction of change or developing trends and reflects whether the firm's financial position has improved, deteriorated or remained constant over a period of time. However, in order to derive meaningful conclusion from time-series analysis, we require similar data quality over a period of time. Care must be taken regarding change in accounting policy, or any significant change arising out of change in government policy, technological development and competition over the period of analysis.

We can use both cross-sectional and time-series analysis simultaneously in order to evaluate a firm's performance.

Objectives of Ratio Analysis

1. To locate the weak spots of business which need more attention.
2. To provide deeper analysis of the liquidity, solvency, activity and profitability of business
3. To facilitate intra-firm comparison of the performance of the different divisions of the firm.
4. To facilitate inter-firm comparison.
5. To provide information useful for making estimates and preparing the plans for the future.

Advantages of Ratio Analysis:

1. **Useful in the analysis of financial statements:**
   It is easy to understand the financial position of a business enterprise in respect of short-term solvency, capital structure position, etc; with the help of various ratios.
2. **Useful in judging the operating efficiency of business:**

Ratio enables the users of financial information to determine the operating efficiency of business firms by relating the profit figures to the capital employed for a given period.

3. **Useful in simplifying accounting figures:**
   Financial Ratios are useful because they summarise briefly the results of detailed and complicated computation. It discloses the relationship between two figures which have a cause and effect relationship with each other.
4. **Useful in Inter-firm and Intra-firm comparison:**
   With the help of ratios, a firm can compare its performance with that of other firms and of industry in general. The ratio also helps firm to compare the performance of different units belonging to the same firm. Even the progress of a firm from year to year cannot be measured without the help of ratios.
5. **Effective Control:**
   Ratio analysis discloses the liquidity, solvency and profitability of the business enterprise. Such information enables management to assess the changes that have taken place over a period of time in the financial activities of the business. It helps them in discharging their managerial functions, e.g., planning, organising, directing, communicating and controlling more effectively.
6. **Useful in locating the weak spots (problem areas) of the business:**
   Ratios help businesses in identifying the problem areas as well as the bright areas of the business. Problem areas would need more attention and bright areas will need polishing to have still better results.
7. **Helpful in Forecasting:**
   Accounting ratios are very helpful in forecasting and preparing the plans for the future.
8. **Estimate about the trends of the business:**
   If accounting ratios are prepared for a number of years, they will reveal the trend of costs, revenue from operations, profits and other important facts.
9. **Fixation of Ideal Standards:**
   Rations help us in establishing ideal standards of the different items of the business. By comparing the actual ratios calculated at the end of the year with the ideal ratios, the efficiency of the business can be measured.

Limitations of Ratio Analysis

1. **Ratio ignores qualitative factors:**
   The ratios are obtained from the figures expressed in money. In this way, qualitative factors, which may be important, are ignored.
2. **Defective accounting information:** The ratios are calculated from the accounting data in the financial statements. It means that defective information would give the wrong ratio.
3. **Ignores Price-Level Changes:**
   Change in price level affects the comparability of ratios. But no consideration is given to price level changes in the accounting variables from which ratios are computed. This really affects the utility of ratios.
4. **Change in accounting procedures:**
   A comparison of results of two firms becomes difficult when we find that these firms are using different procedures in respect of certain items.
5. **Ratios may be misleading in the absence of absolute data:**
   It is essential to study the ratios along with absolute data.
6. **Window dressing:**
   Some companies in order to cover up their bad financial position resort to window dressing i.e showing the better position than the one which really exists.
7. **Lack of Proper Standards:**
   Circumstances differ from firm to firm hence no single standard ratio can be fixed for all the firms against which the actual ratio may be compared.
8. **Ratios Alone are not Adequate for Proper Conclusions:**
   Ratios derived from analysis of statements are not indicators of good or bad financial information and profitability of the firm. They merely indicate the profitability of favourable or unfavourable position.
9. **Effect of Personal Ability and Bias of the analyst:**
   Another important to keep in mind is that different persons draw different meaning of different terms.
10. **Limited use of Single Ratio:**
    The analyst should not merely rely on a single ratio. He should study several ratios before reaching a conclusion.

Classification of Ratios

1. **Liquidity Ratios:** It measures the short-term solvency i.e. the firm's ability to pay its current dues. The liquidity ratios are therefore called 'Short-term Solvency Ratios'. These ratios are used to assess the short-term financial position of the concern. They indicate the firm's ability to meet its current obligations out of current resources. Short-term trade payable of the firm are primarily interested in the liquidity ratios of the firm as they want to know how promptly or readily the firm can meet its current liabilities. Liquidity ratios include two ratios:
   (i) Current Ratio or Working Capital Ratio
   (ii) Quick Ratio or Acid Test Ratio or Liquid Ratio
2. **Solvency Ratios:** These ratios are computed to judge the ability of a firm to pay off its long-term liabilities. It shows the proportion of the fund which is provided by outside creditors in comparison to owners. These ratios reveal how much amount is invested by proprietors and how much amount has been raised from outside sources. Solvency ratios disclose the firm's ability to meet the interest costs regularly and long-term indebtedness at maturity. Some important solvency ratios are:
   (i) Deby Equity Ratio
   (ii) Total Assets to Debt Ratio
   (iii) Proprietary Ratio
   (iv) Interest Coverage Ratio
3. **Activity (or Turnover) Ratios:** Activity ratios are used to indicate the efficiency with which assets such as stock, debtors, fixed assets, etc. of the firm are being utilized. These ratios are also known as a Turnover ratio because they indicate the speed with which assets are being converted or turned over into sales. In other words, these ratios indicate how efficiently the working capital and

inventory is being used to obtain revenue from operations. Higher turnover rations indicate the better use of capital or resources and in turn lead to higher profitability. Some important turnover ratios are:
(i) Inventory Turnover Ratio or Stock Turnover Ratio
(ii) Debtors or Receivables Turnover Ratio
(iii) Creditors or Payables Turnover Ratio
(iv) Working Capital Turnover Ratio

4. **Profitability Ratios:** The efficiency of a business is measured in terms of profits. Thus, profitability ratios are computed to measures the efficiency of a business. These ratios measure the various aspects of the profitability of the company, such as (i) What is the rate of profit on revenue from operations? (ii) Whether the profits are increasing or decreasing and if decreasing, the cause of their decrease? Some important profitability ratios are :
(i) Gross Profit Ratio
(ii) Operating Ratio
(iii) Operating Profit Ratio
(iv) Net Profit Ratio
(v) Return on Investment or R.O.I

1. **Liquidity Ratio (Short-Term Solvency Ratios)**

(a) Current Ratio:

The current ratio is the proportion of current assets to current liabilities.

Current Ratio = Current Assets/Current Liabilities

Current Assets: which mean the assets which are held for their conversion into cash within a year. Tire following are the examples of Current Assets:

- Cash Balances.
- Marketable Securities
- Bank Balance Debtors
- Bills Receivable
- Stock
- Prepaid Expenses etc.
- Short term loans Accrued Income

Items exclude from Current Assets

- Loose Tools, Stores and Spares
- Provision for Doubtful debts

Current Liabilities: which mean the liabilities which are expected to be matured within a year. The following are the examples of Current Liabilities:

- Creditors
- Provision for tax
- Bank overdraft
- Unclaimed dividend
- Bills Payable
- Income-received in advance
- Short Term Loans and advances

Significance: An ideal ratio is 2:1. A higher ratio indicates poor investment policies of management and poor inventory control while a low ratio indicates lack of liquidity and shortage of working capital. The current ratio, thus, throws good light on the short-term financial position and policy of a firm.

(b) Liquid Ratio or Quick Ratio or Acid Test Ratio

It is the ratio of quick (or liquid) assets to current liabilities. This ratio indicates whether the firm is in a position to pay its current liabilities within a month or immediately.

Quick Ratio = Quick Assets/Current Liabilities

Quick Assets (or Liquid Assets) = Current Assets – Stock – Prepaid Expenses and Advance Tax

Significance: A quick ratio of 1: 1 is supposed to be good for the reason that it indicates the availability of funds to meet the liabilities 100%. If this ratio is more than 1: 1 it can be said that the financial position of the business enterprise is sound and good. On the other hand, if the ratio is less than 1:1 i.e. liquid assets are less than current liabilities, the financial position of the concern shall be deemed to be unsound and additional cash will have to be provided for the payment of current liabilities.

2. **Solvency Ratios**

(a) Debt Equity Ratio: The debt-equity ratio is worked out to ascertain the soundness of the long-term financial policies of the firm. This ratio establishes a relationship between long-term debt and shareholders' funds.

Debt-Equity Ratio = Long term Debts/Shareholder's Funds

Long term Debts = Debentures + Long Term Loans

Shareholder's Funds = Preference Share Capital + Equity Share Capital + General Reserve + Capital Reserves + Securities Premium balances + Credit balances of Profit & Loss A/c – Preliminary Expenses (Fictitious Assets) – Share Issue Expenses- Discount on Issue of Share/Debenture – Underwriting Commission

Or

Shareholder's Fund = Fixed Assets + Current Assets – Current Liabilities

Shareholder's Fund is alternatively termed as internal funds and long-term debts are termed as external funds as well. Hence debt-equity ratio is computed as

Debt equity ratio = External Funds/Internal Funds

Significance: The debt-equity ratio of 2:1 is generally accepted as ideal. A low ratio is considered favourable from an external investor's point of view as they get more security. On the other hand, a high debt-equity ratio indicates that the claims of the creditors are greater than those of the owners.

(b) Total Assets to Debt Ratio: This ratio shows the relationship between total assets and the long-term debts of the firms.

Total Assets to Debt Ratio = Total Assets/Long Term Debts

Total Assets = Fixed Assets + Current Assets – Fictitious Assets

Significance: This ratio measures the proportion of total assets funded by long-term debt. The higher the ratio, the lesser role is played by loaned funds in financing the assets engaged in profit-generating activities of an organization and vice-versa.

(c) Proprietary Ratio: The objective of computing the Proprietary Ratio is to establish the relationship between proprietor's funds and total assets.

Proprietary ratio = Equity/ Total Assets

Total Assets: Fixed Assets + Current Assets – Fictitious Assets.

Significance: Proprietary ratio attempts to indicate the part of total assets funded through equity. The higher the ratio, the more profitable it is for the creditors and the management will have to depend less on outside funds. If the ratio is low, the creditors can be suspicious about the repayment of their debt.

(d) Interest Coverage Ratio: The objective of this ratio is to measure the debt servicing capacity of a business firm in respect of fixed interest on the long-term debts. It also shows whether the firm has sufficient income to pay interest on maturity dates.

Interest Coverage Ratio = Net Profit before Interest and Tax/Fixed Interest Charges

Significance: It reveals the number of times interest is covered by the profits available for interest. A higher ratio ensures the safety of return on the amount of debt and it also ensures the availability of surplus for shareholders.

3. Turnover (or Activity) Ratios:

(a) Stock or Inventory Turnover Ratio: This ratio establishes a relationship between the cost of goods sold and average inventory. The objective of computing this ratio is to determine the efficiency in which the inventory is utilized.

Inventory Turnover Ratio = Cost of Revenue from Operations /Average Inventory

Cost of Revenue from Operations =Revenue from Operations – Gross Profit

Cost of Revenue from Operations = Opening Inventory + Purchases + Direct Expenses – Closing Inventory

Average Stock = (Opening Inventory + Closing Inventory)/2

Significance: This ratio shows the rate at which stocks are converted into sales. The higher the ratio, the better it is for the business, since it means that stock is being quickly converted into sales. Industries which has a very high stock turnover ratio may be operating with a low margin of profit and vice-versa.

Average age of Inventory = $\frac{Days\ in\ year}{Inventory\ Turnover\ Ratio}$

(b) Debtors Turnover Ratio or Trade Receivables Turnover Ratio: This ratio is computed to establishes the relationship between net credit sales and average debtors (or receivables) of the year. It shows the rate at which cash is generated by the turnover of debtors.

Debtors Turnover Ratio = Net Credit Revenue form Operations/Average Trade Receivable

Average Accounts Receivable:

Net Credit Revenue form Operations = Total Revenue form Operations – Cash Revenue form Operations = Debtors + Bills Receivable

Average Accounts Receivables =(Opening Debtors and B/R+ Closing Debtors and B/R)/2

It is important to note that doubtful debts are not deducted from total debtors.

Significance: This ratio indicates the number of times the receivable are turned over in a year in relation to sales. It shows, how quickly debtors are converted into cash. The higher the ratio, the better it is, since it means speedier collection and lesser amount being blocked up in debtors and vice versa.

Average Collection Period = $\frac{365}{Trade\ Receivables\ Turnover\ Ratio}$ = Number of Days

(c) Creditors Turnover Ratio or Trade Payables Turnover Ratio:

Creditors Turnover Ratio indicates the pattern of payment of accounts payable. As accounts payable arise on account of credit purchases, it expresses the relationship between credit purchases and accounts payable.

Average Trade Payables = (Opening Creditors and B/P+ Closing Creditors and B/P)/2

In case details regarding opening creditors and closing creditors and credit purchases are not given, the ratio may be worked out as follows

Creditors Turnover Ratio = Net Credit Purchases/ Average Trade Payables

Significance: It shows the average payment period. By comparing it with the credit period allowed by the suppliers, the conclusion may be drawn. A lower ratio means the credit allowed by the supplier is not enjoyed by the business. A higher ratio means a delayed payment to the supplier which is not a very good policy as it may affect the reputation of the business.

Average Payment Period = $\frac{365}{Trade\ Payables\ Turnover\ Ratio}$

(d) Working Capital Turnover Ratio:

This ratio indicates whether the working capital has been effectively utilized or not in making sales. In fact, in the short run, it is the current assets and current liabilities which play a major role. Careful handling of current assets and current liabilities will mean a reduction in the amount of capital employed thereby improving turnover.

Working Capital Turnover Ratio = Net Revenue from Operations/Working Capital

Working Capital = Current Assets – Current Liabilities

Significance: A high working capital turnover ratio show the efficient utilization of working capital in generating sales. A low ratio, on the other hand, may indicate an excess of working capital or working capital has not been utilized efficiently.

4. Profitability Ratios:

(a) Gross Profit Ratio: The main objective of computing this ratio is to determine the efficiency with which production and/or purchase operations are carried on. It establishes a relationship of gross profit on sales of a firm, which is calculated in percentage.

Gross Profit Ratio = $\frac{\text{Gross Profit}}{\text{Revenue From Operations}} \times 100$

Gross Profit = Revenue From Operations – Cost of Goods Sold

Cost of Revenue From Operations = Opening Inventory + Purchases + Direct Expenses – Closing Inventory

Net Sales = Total Sales – Sales Return

Note

It must be noted that Spare Parts and Loose Tools are excluded from Inventory

Significance: It is a reliable guide to the adequacy of selling price and efficiency of trading activities. No ideal ratio is fixed but normally a higher ratio is always considered good so as to cover not only the remaining costs but also to allow proper returns to the owner.

2. Operating Ratio: This ratio establishes the relationship between the dying cost of goods sold plus other operating expenses to net sales. The lower percentage of operating ratio, the higher the net profit ratio.

Operating Ratio = $\frac{\text{Cost of Revenue From Operations + Operating Expenses}}{\text{Revenue From Operations}} \times 100$

Operating Expenses = Employee Benefit Expenses + Depreciation and Amortisation Expenses+Office or Financial Expenses + Administrative Expenses + Selling and Distribution Expenses + Discount + Bad Debts + Interest on Short-term Loans

Cost of Goods Sold = Revenue From Operations – Gross Profit

Significance: The operating ratio is the yardstick to measure the efficiency with which a business is operated. It shows the percentage of net sales that is absorbed by the cost of goods sold and operating expenses. A high operating ratio is considered unfavourable because it leaves a smaller margin of profit to meet non-operating expenses but, a lower operating ratio is considered better

3. Operating Profit Ratio: This ratio shows the relationship between operating profit and net Revenue From Operations.

Alternatively,

Operating Profit Ratio = $\frac{\text{Operating Profit}}{\text{Revenue From Operations}} \times 100$

Operating Profit = Gross Profit – Other Operating Expenses + Other Operating Incomes

Other Operating Incomes = Commission Received + Discount Received

Other Operating Expenses = Employee Benefit Expenses, Depreciation, Office and Administrative Expenses, Selling and Distribution Expenses, Discount, Bad Debts, Interest on short term loans etc.

If Net Profit is given in the question, Operating Profit may be calculated as follows :

Operating Profit = Net Profit before tax + Non Operating Expenses- Non Operating Incomes

Significance: Operating profit ratio helps to analyze the performance of the business and throws light on the operational efficiency of the business. It is very useful for inter-firm as well as intra-firm comparison.

4. **Net Profit Ratio:** Net profit ratio is based on the all-inclusive concept of profit. It relates sales to net profit after operational as well as non-operational expenses and income.

Net Profit Ratio = $\frac{\text{Net Profit } after\ Tax}{\text{Other Operating Incomes}} \times 100$

Net Profit = Gross Profit – Indirect Expenses and Losses + Other Incomes

Indirect Expenses and Losses = Office Expenses + Selling Expenses + Interest on Long term Borrowings + Accidental Losses

Significance: It is a measure of net profit margin in relation to sales. It expresses the overall efficiency of the business.

A high net profit ratio would enable the firm

1. to pay higher dividends,
2. to face bad economic conditions
3. to create adequate general reserves. A low net profit ratio has opposite results.

5. **Return on Investment:** This ratio reflects overall profitability of business. It is calculated by comparing the profits earned and the capital employed to earn it.

Return on Investment = $\frac{Net\ Profit\ before\ Interest,Tax\ and\ Dividend}{Capital\ Employed} \times 100$

Capital Employed = Shareholder's Funds + Non Current Liabilities

Or

Capital Employed = Non Current Assets + Working Capital

Solved Examples

Q1. Calculate Current Ratio and Quick Ratio from the following particulars and also give your comments about the same:

			₹
Cash and Cash Equivalents			46,000
Inventory:	Raw Materials	1,10,000	
	Work-in-Progress	30,000	
	Finished Goods	1,20,000	
	Loose Tools	40,000	3,00,000
Machinery			5,00,000
Computer Software			1,50,000
Trade Payables			1,70,000
Trade Receivables			2,00,000
Long-term Investments			2,10,000
Short-term Investments			50,000
Liability for Current Taxation			30,000
Liability for Future Taxation			20,000
Bank Overdraft			60,000
Dividend Payable			50,000
Outstanding Expenses			10,000
Prepaid Expenses			20,000

SOLUTION:

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

Current Assets = Cash & Cash Equivalents + Inventory (excluding loose tools) + Trade Receivables + Short-term investments + Prepaid Expenses.

= ₹ 46,000 + ₹ 2,60,000 + ₹2,00,000 + ₹50,000 + ₹20,000

= ₹5,76,000

Current Liabilities = Trade Payables + Liability for Current Taxation + Bank Overdraft + Dividend Payable + Outstanding Expenses

= ₹1,70,000 + ₹30,000 + ₹60,000 + ₹50,000 + ₹10,000

= ₹3,20,000

Current Ratio = $\frac{₹\ 5,76,000}{₹\ 3,20,000} = 1.8 : 1$

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

Liquid Assets = Current Assets – Inventory – Prepaid Expenses

= ₹5,76,000 – ₹2,60,000 – ₹20,000

= ₹2,96,000

Quick Ratio = $\frac{₹\ 2,96,000}{₹\ 3,20,000} = 0.925 : 1$

Comments: The ideal current ratio should be 2 : 1. But in this case the current ratio is 1.8 : 1 which is less than the ideal ratio. Therefore, it can be said that the short-term financial position of the company is not satisfactory.
The ideal quick ratio should be 1 : 1. But in this case the quick ratio is 0.925 : 1, hence, the short-term financial position cannot be said to be satisfactory.

Q2. Calculate Total Assets to Debt Ratio from the following information:

	₹
Shareholder's Funds	14,00,000
Total Debts	16,00,000
Current Liabilities	4,00,000

SOLUTION:

Total Assets to Debt Ratio = $\frac{\text{Total Assets}}{\text{Debt or Long term Debts}}$

Long term Debts = Total Debts – Current Liabilities

= ₹16,00,000 − ₹4,00,000 = ₹12,00,000

Total Assets = Shareholder's Funds + Total Debts

$= ₹14,00,000 + ₹16,00,000 = ₹\ 30,00,000$

Total Assets to Debt Ratio $= \frac{₹\ 30,00,000}{₹\ 12,00,000} = 2.5 : 1$

Q3. The following particulars are extracted from the Balance Sheet of Goodwill Enterprises Ltd. as at 31st March, 2014:

	₹
Equity Share Capital	3,00,000
10% Preference Share Capital	1,20,000
Capital Reserve	60,000
Profit & Loss Balance	1,20,000
12% Debentures	50,000
10% Mortgage Loan	1,50,000
Current Liabilities	2,80,000
Non Current Assets	4,80,000
Current Assets	6,00,000

Showing the full working, calculate the following ratios:
(i) Debt Equity Ratio
(ii) Proprietary Ratio
(iii) Interest Coverage Ratio
Net Profit after interest and tax amounted to ₹63,000
Rate of Income Tax was 50%

SOLUTION:

(i) Debt-Equity Ratio $= \frac{\text{Debt}}{\text{Equity}}$ or $\frac{\text{Long term Debts}}{\text{Shareholder's Funds}}$

Long Term Debts = Debentures + Mortgage Loan
$= ₹50,000 + ₹1,50,000 = ₹2,00,000$
Shareholder's Funds = Equity Share Capital + Pref. Share Capital + Capital Reserve + P & L Balance
$= ₹3,00,000 + ₹1,20,000 + ₹60,000 + ₹1,20,000$
$= ₹6,00,000$

Debt Equity Ratio $= \frac{₹\ 2,00,000}{₹\ 6,00,000} = .33 : 1$

(ii) Proprietary Ratio $= \frac{\text{Equity}}{\text{Total Assets}} = \frac{\text{Shareholder's Funds}}{\text{Total Assets}}$

Total Assets = Non Current Assets + Current Assets
$= ₹4,80,000 + ₹6,00,000 = ₹10,80,000$

Proprietary Ratio $= \frac{₹\ 6,00,000}{₹\ 10,80,000}$

$= .5556$ or 55.56%

(iii) Interest Coverage Ratio $= \frac{\text{Net Profit before Interest and Tax}}{\text{Fixed Interest Charges}}$

Fixed Interest Charges = 12% Interest on Debentures of ₹50,000 + 10% Interest on Mortgage Loan of ₹1,50,000
$= ₹6,000 + ₹15,000 = ₹21,000$

Net Profit before Interest and Tax is Calculated as follows:

Net Profit after Interest and Tax = ₹63,000

Net Profit before Tax $= ₹\ 63,000 \times \frac{100}{50} = ₹1,26,000$

Net Profit before Interest and Tax = ₹1,26,000 + Fixed Interest Charges
$= ₹1,26,000 + ₹\ 21,000 = ₹1,47,000$

Interest Coverage Ratio $= \frac{₹\ 1,47,000}{₹\ 21,000} = 7$ times.

Q4. Calculate (i) Inventory Turnover Ratio and (ii) Average Age of Inventory from the following:

STATEMENT OF PROFIT & LOSS
for the year ended 31st March, 2015

Particulars	*Note No.*	*(₹)*
I. Revenue from Operations		*5,00,000*
II. Expenses		
(a) Purchase of Stock in Trade		2,50,000
(b) Change in Inventories of Stock in Trade	1	(8,000)
(c) Employee Benefits Exp.	2	90,000
(d) Other Expenses	3	48,000
Total Expenses		3,80,000
III. Profit before Tax (I – II)		1,20,000

Notes to Accounts:

(1)	**Change in Inventories of Stock in Trade**	
	Opening Inventory	60,000
	Less: Closing Inventory	68,000
		(8,000)
(2)	**Employee Benefit Expenses:**	
	Wages	58,000
	Salaries	32,000
		90,000
(3)	**Other Expenses:**	
	Carriage Inwards	20,000
	Carriage Outwards	15,000
	Miscellaneous Expenses	13,000
		48,000

SOLUTION:

(i) Inventory Turnover Ratio $= \frac{\text{Cost of Revenue from Operations}}{\text{Average Inventory}}$

Cost of Revenue from Operations = Purchase of Stock in Trade + Change in Inventory of Stock in Trade + Employee Benefit Exp. (Wages) + Other Exp. (Carriage Inward)

$= ₹2,50,000 - ₹8,000 + ₹58,000 + ₹20,000$

$= ₹3,20,000$

Average Inventory $= \frac{60,000 + 68,000}{2} = ₹\ 64,000$

Inventory Turnover Ratio $= \frac{3,20,000}{64,000} = 5$ times.

(ii) Average Age of Inventory $= \frac{\text{Days in a year}}{\text{Inventory Turnover Ratio}}$

$= \frac{365}{5} = 73$ days

Inventory age of 73 days implies that, on an average, the money blocked in inventory gets converted into revenue from operations in73 days. If the inventory turnover ratio goes up, the average age of inventory will go down and vice versa.

Q5. Calculate Trade Payables Turnover Ratio from the following information:

	₹
Credit Purchases during the year	6,20,000
Purchase Returns (Out of credit purchase)	20,000
Opening Creditors	1,00,000
Closing Creditors	1,40,000
Opening Bills payable	25,000
Closing Bills payable	35,000

SOLUTION:

Trade Payables Turnover Ratio $= \frac{\text{Net Credit Purchases}}{\text{Average Creditors + Average B/P}} = \cdots$ times

Net Credit Purchases $= ₹\ 6,20,000 - ₹\ 20,000 = ₹\ 6,00,000$

Average Creditors & B/P $= \frac{₹\ 1,00,000 + ₹\ 1,40,000 + ₹25,000 + ₹\ 35,000}{2}$

$= ₹\ 1,50,000$

Trade Payable Turnover Ratio $= \frac{₹\ 6,00,000}{₹\ 1,50,000} = 4$ times.

Q6. From the following balance sheet and other information calculate (i) Working Capital Turnover Ratio, (ii) Debt Equity Ratio and (iii) Trade Receivables Turnover Ratio.

BALANCE SHEET

as at 31st March, 2012

Particulars	*Note No.*	₹
I. EQUITY AND LIABILITIES:		
Shareholder's Funds:		
(a) Share Capital		2,00,000
(b) Reserve & Surplus	1	1,80,000
Non-Current Liabilities:		
Long-term Borrowings	2	2,40,000

Current Liabilities:			
Trade Payables			1,00,000
	TOTAL		7,20,000
II. ASSETS:			
Non-Current Assets			3,60,000
Current Assets:			
(a) Inventory			80,000
(b) Trade Receivables			1,80,000
(c) Cash & Cash Equivalents			1,00,000
	TOTAL		7,20,000

Notes: (1) Reserve & Surplus:

General Reserve	80,000
Profit & Loss	1,00,000
	1,80,000

(2) Long-term Borrowings:

Loan @ 15%	2,40,000

(i) Revenue from Operations during the year amounted to ₹3,80,000.
(ii) Revenue from Operations returns during the year amounted to ₹20,000.

SOLUTION:

(i) Working Capital Turnover Ratio $= \frac{\text{Net Revenue from Operations}}{\text{Working Capital}}$

Current Assets = Inventory + Trade Receivables + Cash & Cash Equivalents

= ₹80,000 + ₹1,80,000 + ₹1,00,000

= ₹3,60,000

Current Liabilities = Trade Payables = ₹1,00,000

Working Capital = Current Assets – Current Liabilities

= ₹3,60,000 − ₹1,00,000 = ₹2,60,000

Working Capital Turnover Ratio $= \frac{3,60,000}{2,60,000} = 1.38$ times

(ii) Dept-Equity Ratio $= \frac{\text{Debt}}{\text{Equity}}$ or $\frac{\text{Long term Debts}}{\text{Shareholder's Funds}}$

Long term Debt = Loan @ 15%

= ₹2,40,000

Shareholder's Funds = Share Capital + General Reserve + Profit and Loss

= ₹2,00,000 + ₹80,000 + ₹1,00,000

= ₹3,80,000

Debt-Equity Ratio $= \frac{2,40,000}{3,80,000} = .63 : 1$

(iii) Trade Receivables Turnover Ratio $= \frac{\text{Net Revenue from Operations}}{\text{Trade Receivables}}$

Trade Receivables Turnover Ratio $= \frac{3,60,000}{1,80,000} = 2$ times

Q7. From the following calculate
(a) Net Profit Ratio
(b) Operating Profit Ratio

S. No.	*Items*	*Amount ₹*
1.	Revenue from Operations	2,00,000
2.	Gross Profit	75,000
3.	Office Expenses	15,000
4.	Selling Expenses	26,000
5.	Interest on Debentures	5,000
6.	Accidental losses	12,500
7.	Income from Rent	2,500
8.	Commission received	2,000

SOLUTION:

(a) Net Profit Ratio $= \frac{\text{Net Profit}}{\text{Revenue from Operations}} \times 100$

Net Profit = Gross Profit – Indiret Expenses & Losses + Other Incomes

Indirect Expenses and Losses = Office Expenses + Selling Expenses + Interest on Debentures + Accidental Losses

= ₹15,000 + ₹26,000 + ₹5,000 + ₹12,000

= ₹58,000

Other Incomes = Income from Rent + Commission Received

= ₹2,500 + ₹2,000 = ₹4,500

Net Profit = ₹75,000 – ₹58,000 + ₹4,500 = ₹21,500

Revenue from Operations = ₹2,00,000

∴ Net Profit Ratio $= ₹\frac{21,500}{2,00,000} \times 100 = 10.75\%$

(b) Operating Profit Ratio $= \frac{\text{Operating Profit}}{\text{Revenue from Questions}} \times 100$

Operating Profit = Gross Profit + Other Operating Income – Other Operating Expenses

Other Operating Income = Comission Received

= ₹2,000

Other Operating Expenses = Office Expenses + Selling Expenses

= ₹15,000 + ₹26,000 = ₹41,000

∴ Operating Profit = ₹75,000 + ₹2,000 − ₹41,000 = ₹36,000

Revenue from Operations = ₹2,00,000

∴ Operating Profit Ratio $= ₹\frac{36,000}{2,00,000} \times 100 = 18\%$

Q8. A company has a loan of ₹20,00,000 as part of its capital employed. The interest payable on loan is 15% and the ROI of the company is 25%. The rate of income tax is 40%. What is the gain to the shareholders due to the loan raised by the company?

SOLUTION:

Return on Investment (R.O.I) $= \frac{\text{Net Profit before Interest and Tax}}{\text{Capital Employed}} \times 100$

Since Capital Employed given in the question is ₹20,00,000 and R.O.I. is 25%, therefore:

Net Profit before Interest and Tax = $20,00,000 \times \frac{25}{100}$ = ₹5,00,000

Less : Interest paid 15% of ₹20,00,000 = ₹3,00,000

Profit after Interest = ₹2,00,000

Less : Tax paid 40% of ₹2,00,000 = ₹ 80,000

Net gain to shareholders: = ₹1,20,000

Q9. Calculate the following ratios from the details given below:

(i) Current Ratio
(ii) Liquid Ratio
(iii) Operating Ratio
(iv) Gross Profit Ratio

Details:

Current Assets = ₹70,000
Net working Capital = ₹30,000
Inventories = ₹30,000
Revenue from Operations = ₹1,40,000
Cost of Revenue from Operations = ₹ 68,000

SOLUTION:

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

Current Liabilities = Current Assets – Net Working Capital

= ₹70,000 – ₹30,000 = ₹40,000

Current Ratio $= \frac{₹70,000}{₹40,000} = 1.75 : 1$

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

Liquid Assets = Current Assets − Inventories

= ₹70,000 − ₹30,000 = ₹40,000

Liquid Ratio $= \frac{₹40,000}{₹40,000} = 1 : 1$

(iii) Operating Ratio $= \frac{\text{Cost of Revenue from Operations + Operating Exp.}}{\text{Revenue from Operations}} \times 100$

$= \frac{68,000}{1,40,000} \times 100 = 48.57\%$

(iv) Gross Profit Ratio $= \frac{\text{Gross Profit}}{\text{Revenue from Operations}} \times 100$

Gross Profit $=$ Revenue from Operations $-$ Cost of Revenue from Operations

$= 1,40,000 - 68,000 = 72,000$

Gross Profit Ratio $= \frac{72,000}{1,40,000} \times 100 = 51.43\%$

QUESTIONS FOR PRACTICE

MCQ

1. The ____ ratios are primarily measures of return.
(a) Liquidity (b) Activity
(c) Debt (d) Profitability

2. The following groups of ratios are primarily measure risk
(a) liquidity, activity and profitability
(b) liquidity, activity and inventory
(c) liquidity, activity and debt
(d) liquidity, debt and profitability

3. The ____ indicates the percentage of each sales rupee remaining after the firm has paid for its goods.
(a) Net profit margin
(b) Operating profit margin
(c) Gross profit margin
(d) Earnings available to equity shareholders

4. The credit sale of M/S Dinesh & Sons is ₹21,00,000, Average debtors and bills receivables of the accounting period amounted to ₹2,00,000 and ₹ 1,50,000 respectively. What will be the debtor's turnover ratio?
(a) 4 times (b) 5 times
(c) 6 times (d) 7 times

5. Total purchase ₹1,70,000, cash purchases ₹16,000, purchase return ₹8,000, creditors at the end of the year ₹32,000, creditors in the beginning ₹24,000. What will be the creditors turnover ratio?
(a) 5.12 times (b) 5.16 times
(c) 5.21 times (d) 5.25 times

6. Consider the following information.
Long-term borrowings ₹2,00,000; Long-term provision ₹ 1,00,000; Current liabilities ₹ 50,000; Non-current assets ₹3,60,000; Current assets ₹90,000 Proprietary ratio will be
(a) 22.2% (b) 21.8%
(c) 36% (d) None of these

7. Calculate operating ratio, if cost of revenue from operations ₹50,000, revenue from operations ₹ 1,50,000 and operating expenses ₹ 20,000.
(a) 45% (b) 46.7%
(c) 48.1% (d) 42.2%

8. ABC Co. extends credit terms of 45 days to its customers. Its credit collection would be considered poor if its average collection period was
(a) 30 days (b) 36 days
(c) 47 days (d) 37 days

9. …….. 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

10. The ……. ratios provide the information critical to the long-run operation of the firm
(a) liquidity (b) activity
(c) solvency (d) profitability

11. Which of the following is/are objective(s) of ratio analysis?
(a) To know the areas of the business which need more attention.
(b) To provide a deeper analysis of the profitability, liquidity, solvency and efficiency levels -in the business.
(c) To provide information by making cross sectional analysis by comparing the performance with the best industry standards.
(d) All of the above

12. Which of the following points out the significance of ratio analysis?
(a) It helps the business in identifying the problem areas.
(b) It ignores price level changes.
(c) It ignores qualitative aspects.
(d) All of the above

13. The Current Assets of APE Ltd. are ₹6,00,000; Current Liabilities are ₹2,00,000; Inventories are ₹1,50,000; Prepaid Expenses are ₹50,000 and Cash and Cash Equivalents are ₹1,00,000. What is its quick ratio?
(a) 1 : 1 (b) 2 : 1
(c) 1.5 : 1 (d) 3 : 1

14. Current ratio of Vidur Pvt. Ltd. is 3:2. Accountant wants to maintain it at 2:1. Following options are available
(i) He can repay bills payable.
(ii) He can take short-term loan.
(iii) He can purchase goods on credit.
Choose the correct option.
(a) Only (i) is correct
(b) Only (ii) is correct
(c) Only (i) and (iii) are correct
(d) Only (ii) and (iii) are correct

15. What is the debt to equity ratio when the following information is available?
Total Assets ₹35,00,000; Total Debts ₹25,00,000; Current Liabilities ₹8,00,000.
(a) 1.7:1 (b) 2:1
(c) 3:1 (d) 3:2

16. A debt-equity ratio of ……. is considered satisfactory.
(a) 1:1 (b) 4:1
(c) 2:1 (d) There is no such value

17. A very high working capital turnover ratio may be a sign of ……
(a) undertrading (b) overtrading
(c) optimal trading (d) None of these

18. Debt-equity ratio of a company is 1:2. Purchase of a fixed asset for ₹5,00,000 on long-term deferred payment basis will
(a) increase the ratio
(b) decrease the ratio
(c) the ratio will not change
(d) either (a) or (b)

19. What is the inventory turnover ratio, when the following is given?
COGS = ₹1,50,000; Closing Inventory = ₹60,000; Excess of Closing Inventory over Opening Inventory is ₹ 20,000.
(a) 3 times (b) 2.14 times
(c) 1.5 times (d) 4 times

20. A company's current ratio is 4 : 2 and current liabilities are ₹6,20,000. What will be the amount of current assets?
(a) ₹12,40,000 (b) ₹3,10,000
(c) ₹6,00,000 (d) ₹24,80,000

SUBJECTIVE QUESTIONS

1. The Quick ratio of a company is 0.8:1. State with reason whether the following transactions will increase, decrease or not change the quick ratio:
(i) Purchase of loose tools ₹2,000.
(ii) Insurance premium paid in advance ₹500.
(iii) Sale of goods on credit ₹3,000.
(iv) Honoured a bills payable ₹5,000 on maturity.

2. (a) The ratio of Current Assets (₹3,00,000) to Current Liabilities (₹2,00,000) is 1.5 : 1.
The accountant of the firm is interested in maintaining a Current Ratio of 2: 1, by paying off a part of the current liabilities. Compute the amount of current liabilities that should be paid, so that the Current Ratio at the level of 2:1 may be maintained.
(b) Total Debts of Rimzim Ltd. are ₹3,90,000, Long-term Debts are ₹3,00,000 and working capital is ₹1,80,000. Calculate current ratio.

3. From the following information, compute 'Debt to Equity Ratio'.

Particulars	(₹)
Long-term Borrowings	2,00,000
Long-term Provisions	1,00,000
Current Liabilities	50,000
Non-current Assets	3,60,000
Current Assets	90,000

4. Calculate Current Ratio of a company from the following information:
Inventory Turnover Ratio: 4 times
Inventory in the end was ₹20,000 more than inventory in the beginning.
Revenue from operations ₹3,00,000
Gross Profit Ratio 25%

5. From the following balances obtained from the books of Heera Ltd. calculate proprietary ratio:

Particulars	₹
Plant and Machinery	10,00,000
Land and Building	6,00,000
Motor Car	8,00,000
Furniture	1,50,000
Stock	4,50,000
Debtors	90,000
Cash at Bank	3,40,000
Non-Current Liabilities	10,00,000
Current Liabilities	6,20,000

6. Assuming that the Debt to Equity ratio of a company is 0.50, state whether this ratio would increase, decrease or remain unchanged in the following cases:
   (i) Purchase of fixed assets on a credit of 3 months
   (ii) Issue of new shares for cash
   (iii) Purchased machinery and paid to the vendors by issue of equity shares
   (iv) Obtained 8% long-term loan

7. From the following information, calculate any two of the following ratios:
(a) Debt to Equity Ratio
(b) Working Capital Turnover Ratio and
(c) Return on Investment

Information:

Equity Share Capital ₹50,000; General Reserve ₹5,000; Statement of Profit and Loss after tax and interest ₹15,000; 9% Debentures ₹20,000; Trade payables (Creditors) ₹15,000; Land and Building ₹65,000, Equipments ₹15,000; Trade Receivables (Debtors) ₹14,500 and Cash ₹5,500. Sales (Revenue from Operations) for the year ended 31-03-2017 was ₹1,50,000, Tax rate 50%.

8. From following details obtained from the financial statements of Jeev Ltd., Calculate interest coverage ratio:
Net Profit after tax ₹1,20,000
12% Long-term Debt ₹20,00,000
Tax Rate 40%.

9. From the following information, calculate inventory turnover ratio; Revenue from operations ₹16,00,000; Average Inventory ₹2,20,000; Gross Loss Ratio 5%.

10. From the following information related to Naveen Ltd., calculate
(a) Return on Investment and,
(b) Total Assets to Debt Ratio.

Information:

Fixed Assets ₹75,00,000; Current Assets ₹40,00,000; Current Liabilities ₹27,00,000; 12% Debentures ₹80,00,000 and Net Profit before Interest, Tax and Dividend ₹14,50,000.

HOMEWORK

MCQ

1. Which of the following is/ are the objectives of Ratio Analysis?
(a) To know areas of business which need more attention
(b) To provide a deeper analysis of profitability, liquidity , solvency and efficiency level of business
(c) To provide information by making cross sectional analysis by comparing the performance with the best industry standards.
(d) All of the above

2. ____ the quick ratio , ___ the short term financial position.
(a) Higher; Better
(b) Lower; Better
(c) Higher; Poorer
(d) Lower; Poorer

3. _____ provides an approximation of the average time that it takes to collect debtors.
(a) Average Collection period
(b) Average Payment period
(c) Debtors turnover ratio
(d) None of the above

4. What will be effect on current ratio if a bill payable is discharged on maturity ?
(a) It will increase
(b) It will decrease
(c) No effect
(d) Can't say

5. A rise in operating ratio will indicate a rise in efficiency.
(a) True
(b) False
(c) Can't say
(d) Partially true

6. Which of the ratios shows how efficiently a company's resources are used?
(a) Profitability Ratio
(b) Solvency Ratio
(c) Activity Ratio
(d) Liquidity Ratio

7. Which ratio indicates the speed with which the amount is being is being paid to the creditors ?
(a) Trade payables turnover ratio
(b) Trade receivables ratio
(c) Inventory Turnover ratio
(d) None of the above

8. What does the low proprietary ratio of the company signify
(a) It indicates a higher safety margin for lenders.
(b) It indicates that long-term lenders are less secured.
(c) It indicates firm is less dependent on external source of finance.
(d) None of the above

9. A very high working capital turnover ratio may be a sign of
(a) undertrading

(b) overtrading
(c) optimal trading
(d) None of these

10. Solvency ratio measures the ability of a firm to pay its
(a) short-term debt
(b) long-term debt
(c) equity capital
(d) Both (a)and (b)

11. If the debtor's turnover ratio of WS Ltd. is 6 times, creditors turnover ratio is 4 times then what is its average collection period in months?
(a) 3
(b) 2
(c) 4
(d) 6

Directions: Read the following hypothetical extract of Geeta Ltd. and answer the questions 12 to 16 based on the same.

Year Amount	2021 (in ₹)	2020 (in ₹)	2019 (in ₹)
Outstanding Expenses	1,00,000	80,000	50,000
Prepaid Expenses	6,00,000	5,00,000	7,00,000
Trade Payables	36,00,000	32,00,000	28,00,000
Inventory	24,00,000	20,00,000	22,00,000
Trade Receivables	22,00,000	16,00,000	20,00,000
Cash in Hand	34,00,000	24,00,000	30,00,000
Revenue from Operations	48,00,000	36,00,000	40,00,000
Gross Profit Ratio	12%	15%	18%

12. Current ratio for the year 2021 will be .....
(a) 2 : 1 (b) 1.6 : 1
(c) 2.32 : 1 (d) 2.4 : 1

13. Quick ratio for the year 2020 will be ..... .
(a) 1.22 : 1 (b) 1.8 : 1
(c) 0.94 : 1 (d) 1.25 : 1

14. Inventory turnover ratio for the year 2021 will be .....
(a) 1.62 times (b) 1.82 times
(c) 1.55 times (d) 1.92 times

15. Cost of revenue from operations for the year 2021 will be ..... .
(a) ₹42,24,000 (b) ₹42,26,000
(b) ₹42,30,000 (b) ₹42,34,000

16. Which of the following about inventory turnover ratio is true?
(a) It studies the frequency of conversion of inventory of finished goods into revenue from operations.
(b) Higher the ratio, the better it is.
(c) Low turnover of inventory may be due to bad buying, obsolete inventory, etc., and is a danger signal.
(d) All of the above

Directions : Read the following hypothetical extract of ABC Ltd. and answer the questions 17 to 21 on the basis of the same.

Particulars	Amount(₹)
I. EQUITY AND LIABILITIES	
1. Shareholder's Funds	
(a) Equity Share Capital	30,00,000
(b) Reserves and Surplus	20,00,000
2. Non-Current Liabilities	
Long term Borrowings (12% Debentures)	10,00,000
3. Current Liabilities	
(a) Short term Borrowings	4,00,000
(b) Trade Payables	24,00,000
Total	80,00,000
II. Assets	
1. Non- Current Assets	
(a) Fixed Assets	33,00,000
(b) Long term Investments	3,20,000
2. Current Assets	
(a) Inventories	18,20,000
(b) Trade Receivables	24,80,000
(c) Cash and Cash Equivalents	80,000
Total	80,00,000

17. Debt-equity Ratio for the given year will be ……. .
(a) 0.23 : 1 (b) 1.8 : 1
(c) 2.32 : 1 (d) 2.4 : 1

18. Proprietary ratio for the given year will be …… .
(a) 1.75 : 1 (b) 1.8 : 1
(c) 0.52 : 1 (d) 1.25 : 1

19. Total assets to debt ratio for the year 2021 will be ……
(a) 6 : 1 (b) 8 : 1
(c) 4 : 1 (d) 3 : 1

20. PMN Ltd. decides to issue bonus shares what would be the impact on debt-equity ratio?
(a) It will increase (b) It will decrease
(c) No effect (d) Either (a) or(b)

21. Ratios provide a ___ measure of a company's performance and condition
(a) Definitive
(b) Gross
(c) Relative
(d) Qualitative

Directions : Read the following hypothetical extract of PQR Ltd. and answer the questions 22 to 26 on the basis of the same.

Particulars	Amount (₹)
Paid-up share Capital	8,00,000
Current Assets	5,00,000
Credit Revenue from Operations	3,00,000
Cash Revenue from Operations	75% of Credit Revenue from Operations
9% Debentures	3,40,000
Current Liabilities	2,90,000
Cost of Revenue from Operations	3,70,000

22. What is Gross profit ratio of PQR Ltd.?
(a) -29.52% (b) 29.52%
(c) 30% (d)– 30%

23. Which of the following efforts might help in improving the gross profit ratio of the company?
(i) Increasing the selling price
(ii) Reducing the direct expenses
(iii) Charging greater depreciation
(iv) Decreasing the selling price
(a) Only i (b) i,iii,iv
(c) i,ii (d) i,ii,iii,

24. What is the working capital turnover ratio of Eva Ltd.?
(a) 2 times (b) 3 times
(c) 2.5 times (d) 3.2 times

25. What is the proprietary ratio of Eva Ltd.?
(a) 0.66:1 (b) 0.59:1
(c) 0.54:1 (d) 0.56:1

26. ____ analysis involves comparison of current to past performance and the evaluation of developing trends.
(a) Time series (b) Cross-Sectional
(c) Marginal (d) Quantitative

Directions for question number 27 to 30: There are two statements marked as Assertion (a) and Reason (R). Read the statements and choose the appropriate option from the options given below

(a) Both Assertion (a) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (a)
(b) Both Assertion (a) and Reason (R) are true, but Reason (R) is not the correct explanation of Assertion (a)
(c) Assertion (a) is false, but Reason (R) is true
(d) Assertion (a) is true, but Reason (R) is false

27. **Assertion** (a) Personal bias can be reflected in ratio analysis.
Reason (R) Different people may interpret the same ratio in different ways, which affects its trust ability.

28. **Assertion** (a) Inventories and prepaid expenses are not considered as quick assets.
Reason (R) Inventories take some time before it is converted into cash while prepaid expenses can be converted into cash.

29. **Assertion** (a) The debt to equity ratio will increase at the time of issue of equity shares for cash.
Reason (R) Issue of equity shares will increase the shareholders' funds but the long-term debts will remain the same.

30. **Assertion** (a) Current ratio is computed to assess the short-term financial position of the enterprise.
Reason (R) Current ratio explains the relation between long-term assets and current liabilities of a business.

SUBJECTIVE QUESTIONS

1. (i) From the following information, Calculate Interest Coverage Ratio:
Net profit after interest and tax ₹1,20,000; Rate of income tax 40%; 15% Debentures ₹ 1,00,000; 12% Mortgage loan ₹1,00,000.

(ii) A company had Current Assets ₹3,00,000 and Current Liabilities ₹1,40,000. Afterwards, it purchased goods worth ₹20,000 on credit. Calculate the Current Ratio after the purchase of goods.

2. From the following information, calculate Operating Profit Ratio:
Opening Stock ₹10,000; Purchases ₹1,20,000; Revenue from operations ₹4,00,000; Purchase Returns ₹5,000; Returns from Revenue from operations ₹15,000; Selling Expenses ₹70,000; Administrative Expenses ₹40,000; Closing Stock ₹60,000.

3. (a) From the following information, calculate 'Total Assets to Debt Ratio':
Shareholders' Funds ₹1,60,000; Total Debt ₹3,60,000, Current Liabilities ₹40,000.
(b) The ratio of Current Assets (₹6,00,000) to Current Liabilities (₹4,00,000) 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. Suggest the amount of Current Liabilities which he must pay for this purpose.

4. Opening Inventory : ₹60,000; Closing Inventory : ₹1,00,000; Inventory turnover ratio 8 times; Selling price 25% above cost; Calculate the Gross Profit Ratio.

5. Inventory turnover ratio is 3 times, Revenue from operations are ₹1,80,000 and Opening Inventory is ₹2,000 more than the Closing Inventory. Calculate opening and closing Inventory when goods are sold at 20% profit on cost.

6. (a) Compute Trade Receivables Turnover Ratio from the following:

	(₹)
Gross Revenue from operations	9,00,000
Trade Receivables at the beginning of year	83,000
Trade Receivables at the end of year	1,17,000
Revenue from Operations Return	1,00,000

(b) From the following information given below, find out average collection period:

	(₹)
Net Credit Revenue from Operations	27,01,000
Trade Receivables	4,44,000

7. Calculate the Trade Payables Turnover Ratio and Average Debt Payment Period for the year 2016-17 from the following information:

Particulars	**(₹)**	**Particulars**	**(₹)**
Cash Purchases	1,00,000	Total Purchases (subject to Returns)	4,07,000
Opening Sundry Creditors (including ₹5,000 due to a supplier of furniture)	30,000	Closing Sundry Creditors (including ₹10,000 due to a supplier of typewriter	60,000
Closing Bills Payable	25,000	Opening Bills Payable	20,000
Purchases Returns	7,000	Provision for Discount on Trade Creditors	1,000

8. Calculate (i) Gross Profit Ratio, (ii) Operating Ratio and (iii) Inventory Turnover Ratio from the following:

	(₹)
Opening Inventory	3,00,000
Closing Inventory	4,20,000
Purchases	14,00,000
Wages	3,70,000
Carriage Inwards	1,50,000
Administrative Expenses	84,000
Selling Expenses	36,000
Revenue from operations	24,00,000

9. Calculate Net Profit Ratio from the following Statement of Profit and Loss of Graham Ltd. for the year ended 31st March, 2017:

Particulars	**Note No.**	**2017 (₹)**
I. Revenue from Operations		1,20,600
II. Expenses:		
Cost of Materials Consumed		55,000
Purchases of Stock-in-Trade		25,000
Employees Benefit Expenses		20,000
Finance Cost		2,000
Other Expenses		400
Total Expenses		1,02,400
III. Profit before Tax (I – II)		18,200

IV. Tax 50%		9,100
V. Profit after Tax (III – IV)		9,100

10. From the following, calculate (a) Net Profit Ratio (b) Operating Profit Ratio

S.No.	Particulars	(₹)
1.	Revenue from Operations	2,00,000
2.	Gross Profit	75,000
3.	Office Expenses	15,000
4.	Selling Expenses	26,000
5.	Interest on Debentures	5,000
6.	Accidental losses	12,000
7.	Income from Rent	2,500

SOLUTION FOR PRACTICE QUESTIONS

SOLUTION FOR MCQ QUESTIONS

1. (d)
2. (d)
3. (c)
4. (c) Debtor's Turnover Ratio
$= \frac{\text{Net Credit Sales}}{\text{Average Trade Receivables}}$
$= \frac{21,00,000}{(2,00,000 + 1,50,000)} = 6$ times

5. (c) Net Credit Purchase = Total Purchase – Cash Purchase – Purchase Return
= 1,70,000 – 16,000 – 8,000
= ₹ 1,46,000
Average Trade Payable
$= \frac{\text{Opening Trade Payable + Closing Trade Payable}}{2}$
$= \frac{24,000+32,000}{2} =$ ₹ 28,000
Creditors Turnover Ratio $= \frac{\text{Net Credit Purchase}}{\text{Average Trade Payable}}$
$= \frac{1,46,000}{28,000} = 5.21$ times

6. (a) Proprietary Ratio $= \frac{\text{Shareholders' Fund}}{\text{Total Assets}}$
Shareholders' Fund = Total Assets* – Long-term Borrowings – Long-term Provision – Current Liabilities
= 4,50,000 – 50,000 – 1,00,000 – 2,00,000
= ₹ 1,00,000
Total Assets* = Non-current Assets + Current Assets
= 3,60,000 + 90,000 = ₹ 4,50,000
Proprietary Ratio $= \frac{1,00,000}{4,50,000} \times 100 =$ 22.2%

7. (b) Sol. Operating Ratio
$= \frac{\text{Cost of revenue from Operations + Operating Expenses}}{\text{Revenue from Operations}} \times 100$
Operating Ratio $= \frac{50,000 + 20,000}{1,50,000} \times 100$
= 46.7%

8. (c)
9. (c)
10. (c)
11. (d)
12. (a)
13. (b) Quick Assets = Current Assets – Inventories – Prepaid Expenses
= 6,00,000 – 1,50,000 – 50,000 = ₹ 4,00,000
Quick Ratio = Quick Assets/Current Liabilities
= 4,00,000/2,00,000 = 2 : 1

14. (a) Repayment of bills payable will reduce current assets and liabilities by the same amount. This will improve the current ratio. Other two options will deteriorate it.

15. (a) Debt to Equity Ratio = Debt/Equity
Debt = Total Debt – Current Liabilities
= 25,00,000 – 8,00,000
= ₹ 17,00,000
Equity = Total Assets – Total Debts
= 35,00,000 – 25,00,000 = ₹ 10,00,000
Debt to equity ratio = 17,00,000/10,00,000 = 1.7 : 1

16. (c)
17. (b)
18. (a) Purchase of a fixed asset for ₹ 5,00,000 on long-term deferred payment basis will increase the debt component but not the equity component and hence ratio will increase.

19. (a) Inventory Turnover Ratio = COGS/Average Inventory
Opening Inventory = Closing Inventory – 20,000 = 60,000 – 20,000 = ₹ 40,000
Average Inventory = (Opening Inventory + Closing Inventory)/2
= 40,000 + 60,000/2
= 1,00,000/2
= ₹ 50,000
Inventory turnover ratio = 1,50,000/50,000 = 3 times

20. (a) Current Ratio $= \frac{\text{Current Assets}}{\text{Current Liabilities}}$
$\Rightarrow \quad \frac{4}{2} = \frac{CA}{6,20,000}$
$\therefore$ Current Assets = ₹ 12,40,000

SOLUTIONS FOR SUBJECTIVE QUESTIONS

1.

Transaction	Effect on Quick Ratio	Reasons
(i)	Decrease	Quick assets have decreased but current liabilities have not changed.
(ii)	Decrease	Quick assets have decreased but current liabilities have not changed.
(iii)	Increase	Quick assets have increased but current liabilities have not changed.
(iv)	Decrease	Both Quick assets and Current Liabilities have decreased by the same amount.

2. (a) Let current liabilities to be paid out of current assets = x

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

$$\frac{2}{1} = \frac{3{,}00{,}000 - x}{2{,}00{,}000 - x}; 3{,}00{,}000 - x = 4{,}00{,}000 - 2x$$

$2x - x = 4{,}00{,}000 - 3{,}00{,}000$; $x = 1{,}00{,}000$

So, in order to maintain the current ratio of 2 : 1, current liabilities to be paid are ₹1,00,000.

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

(i) Calculation of Current Liabilities:

Current Liabilities = Total Debts or Liabilities — Long-term Debts or Liabilities

= ₹3,90,000 – ₹3,00,000 = ₹90,000

(ii) Calculation of Current Assets:

Working Capital = Current Assets — Current Liabilities

1,80,000 = Current Assets — ₹90,000; Current Assets = ₹2,70,000

∴ Current Ratio = $\frac{₹2{,}70{,}000}{₹90{,}000} = 3:1$

3. Debt to Equity Ratio = $\frac{\text{Debt}}{\text{Equity}}$

Debt = Long-term Borrowings + Long-term Provisions

= 2,00,000 + 1,00,000 = ₹3,00,000

Equity = Current Assets+ Non-current Assets — Current Liabilities — Long-term Borrowings — Long-term Provisions

= 90,000 + 3,60,000 – 50,000 – 2,00,000 – 1,00,000 = ₹1,00,000

Debt to Equity Ratio = $\frac{3{,}00{,}000}{1{,}00{,}000} = 3:1$

4. Inventory Turnover Ratio = $\frac{\text{Cost of Revenue from Operations}}{\text{Average Inventory}}$

$$4 \text{ (Given)} = \frac{\text{(Revenue from Operations — Gross Profit)}}{\text{Average Inventory}}$$

$$\text{Average Inventory} = \frac{(₹3{,}00{,}000 \text{ — } 25\% \text{ of } ₹3{,}00{,}000)}{4}$$

$$\text{Average Inventory} = \frac{₹2{,}25{,}000}{4} = ₹56{,}250$$

Closing Inventory = 56,250 + $\frac{1}{2}$ of ₹20,000

= ₹56,250 + ₹10,000 = ₹66,250

Current Assets = Liquid Assets + Closing Inventory

With the help of Quick Ratio, we can find out Liquid Assets:

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

$$0.75 \text{ (Given)} = \frac{\text{Liquid Assets}}{₹40{,}000}$$

or Liquid Assets = ₹40,000 × 0.75 = ₹30,000

Current Assets = Liquid Assets + Inventory

= ₹30,000 + ₹66,250 = ₹96,250

$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}} = \frac{₹96{,}250}{₹40{,}000} = 2.41:1$$

5. Proprietary ratio = $\frac{\text{Shareholders' Funds}}{\text{Total Assets}}$

Total Assets = Plant and machinery + Land and Building + Motor Car + Furniture + Stock + Debtors + Cash at Bank

= 10,00,000 + 6,00,000 + 8,00,000 + 1,50,000 + 4,50,000 + 90,000 + 3,40,000
= ₹34,30,000

Total Assets = Shareholders' Funds + Non-Current liabilities + Current Liabilities

34,30,000 = Shareholders' Funds + 10,00,000 + 6,20,000

Shareholders' Funds = ₹34,30,000 – ₹16,20,000 = ₹18,10,000

Proprietary Ratio = $\frac{₹18,10,000}{₹34,30,000}$ = 0.527

6. (i) No change (ii) Decrease
(iii) Decrease (iv) Increase

7. (a) Debt to Equity Ratio = $\frac{\text{Debt}}{\text{Equity}} = \frac{₹20,000}{₹65,000} = 0.29:1$

Equity = Equity Share Capital + General Reserve + Statement of Profit and Loss
= ₹50,000 + ₹5,000 + ₹15,000 = ₹70,000

(b) Working Capital Turnover Ratio

$= \frac{\text{Net Revenue from Operations}}{\text{Working Capital}}$

$= \frac{₹1,50,000}{₹5,000} = 30 \text{ times}$

Working Capital = Current Assets — Current Liabilities
Current Assets = ₹14,500 + ₹5,500 = ₹20,000
Working Capital = ₹20,000 – ₹15,000 = ₹5,000

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

$= \frac{₹31,800}{₹90,000} \times 100 = 35.33\%$

Profit before tax = $15,000 \times \frac{100}{50} = ₹30,000$

Profit before interest and tax = ₹30,000 + ₹1,800 = ₹31,800
Capital Employed = Share Capital + General Reserve + Statement of Profit and Loss
+ 9% Debentures
= ₹50,000 + ₹5,000 + ₹15,000 + ₹20,000 = ₹90,000.

8. Interest Coverage Ratio = $\frac{\text{Net Profit before Interest and Tax}}{\text{Fixed Interest Charges}}$

Net Profit after tax = ₹1,20,000
Tax rate = 40%

		₹
Net Profit before tax = ₹1,20,000 × 100/60	=	2,00,000
Add: Interest		
12% long-term Debt, *i.e.*, 12/100 × ₹20,00,000	=	2,40,000
Profit before Interest and Tax		4,40,000

Interest Coverage Ratio = $\frac{₹4,40,000}{₹2,40,000}$

= 1.833 times

9. Inventory Turnover Ratio = $\frac{\text{Cost of Revenue from Operations}}{\text{Average Inventory}}$

Cost of Revenue from Operations = Revenue from Operations + Gross Loss
= ₹16,00,000 + ₹80,000 = ₹16,80,000

Average Inventory = ₹2,20,000

Inventory Turnover Ratio = $\frac{₹16,80,000}{₹2,20,000} = 7.64 \text{ times}$

10. (a) Return on Investment

$= \frac{\text{Net Proll before Interest,Tax and Dividend}}{\text{Capital Employed}} \times 100$

Net Profit before Interest, Tax and Dividend = ₹14,50,000
Capital Employed = Fixed Assets + Current Assets — Current Liabilities
= ₹75,00,000 + ₹40,00,000 – ₹27,00,000 = ₹88,00,000

Return on Investment = $\frac{₹14,50,000}{₹88,00,000} \times 100 = 16.47\%$

(b) Total Assets to Debt Ratio = $\frac{\text{Total Assets}}{\text{Long-term Debt}}$

Total Assets = Fixed Assets + Current Assets =75,00,000 + 40,00,000
= ₹1,15,00,000

Long-term Debt = 12% Debentures = ₹80,00,000

Total Assets to Debt Ratio = $\frac{1,15,00,000}{80,00,000} = 1.44 : 1.$

SOLUTION FOR HOMEWORK QUESTIONS

SOLUTION FOR MCQ QUESTIONS

1. (d) **2. (a)** **3. (a)** **4. (a)** **5. (b)** **6. (c)**
7. (a) **8. (b)** **9. (b)** **10. (b)** **11. (b)**
12. (c)

$$\text{Current ratio for 2021} = \frac{\text{Current assets}}{\text{Current liabilities}} = \frac{86,00,000}{37,00,000} = 2.32:1$$

Current assets = Inventory + Trade receivables + Cash in hand + Prepaid expenses
= 24,00,000+ 22,00,000 + 34,00,000 + 6,00,000 = 86,00,000

Current liabilities = Outstanding expenses + Trade payables
= 1,00,000 + 36,00,000 = ₹ 37,00,000

13. (a)

$$\text{Quick ratio} = \frac{\text{Quick assets}}{\text{Current liabilities}} = \frac{40,00,000}{32,80,000} = 1.22$$

Quick assets = Trade receivables + Cash in hand
= 16,00,000 + 24,00,000 = ₹ 40,00,000

Current liabilities = Outstanding expenses + Trade payables
= 80,000 + 32,00,000 = ₹ 32,80,000

14. (d)
15. (a)

COGS = Revenue from operations – Gross profit
= 48,00,000 – 12% of 48,00,000 = ₹ 42,24,000

16. (d)
17. (a)

$$\text{Inventory turnover ratio} = \frac{\text{COGS}}{\text{Average inventory}} = \frac{42,24,000}{22,00,000} = 1.92$$

COGS = Revenue from operations – Gross profit
= 48,00,000 – 12% of 48,00,000 = ₹ 42,24,000

$$\text{Average inventory} = \frac{(\text{Opening inventory} + \text{Closing inventory})}{2}$$

$$= \frac{(20,00,000 + 24,00,000)}{2} = ₹\ 22,00,000$$

$$\text{Debt-equity ratio} = \frac{\text{Debt}^*}{\text{Equity}^{**}} = \frac{10,00,000}{42,00,000} = 0.238:1$$

*Debt = Long-term borrowings (Debentures) = ₹ 10,00,000
**Equity = Equity share capital + Reserves
= 30,00,000 +12,00,000 = ₹ 42,00,000

18. (c)

$$\text{Proprietary ratio} = \frac{\text{Shareholders' funds}^*}{\text{Total assets}^{**}} = \frac{42,00,000}{80,00,000} = 0.525:1$$

* Shareholders' funds = Share capital + Reserves
= 30,00,000 + 12,00,000 = ₹ 42,00,000

19. (b)

$$\text{Total assets to Debt ratio} = \frac{\text{Total assets}}{\text{Debt}} = \frac{80,00,000}{10,00,000} = 8:1$$

20. (c) This is because neither the total long term debts nor the total shareholder's funds change as there is only a conversion of accumulated profits into share capital.

21. (c)

22. (b)

$$\text{Gross Profit Ratio} = \frac{Gross\ Profit}{Revenue\ from\ Operations} \times 100 = \frac{1,55,000}{5,25,000} \times 100 = 29.52\%$$

Cash sales = 3,00,000 × 75% = ₹2,25,000

Revenue from Operations = Cash revenue from Operations + Credit Revenue from Operations

= 2,25,000 + 3,00,000 = ₹5,25,000

23. (c)

24. (c)

$$\text{Working capital turnover ratio} = \frac{\text{Revenue from operations}}{\text{Working capital}} = \frac{5,25,000}{2,10,000} = 2.5 \text{ times}$$

$$\text{Working capital} = \text{Current assets} - \text{Current liabilities} = 5,00,000 - 2,90,000 = ₹\ 2,10,000$$

25. (d)

$$\text{Proprietary ratio} = \frac{\text{Shareholders' funds}}{\text{Total assets}} = \frac{8,00,000}{14,30,000} = 0.56:1$$

Total assets = Paid-up capital + 9% Debentures + Current liabilities

= 8,00,000 + 3,40,000 + 2,90,000 = ₹ 14,30,000

26. (a) **27. (a)** **28. (d)** **29. (c)** **30. (d)**

SOLUTION FOR SUBJECTIVE QUESTIONS

1. (i) Interest Coverage Ratio = $\frac{\text{Net Profit before Interest and Tax}}{\text{Interest on long term–debts}}$

	(₹)
Net Profit before Tax (WN)	= 2,00,000
Add: Interest on debt	= 27,000(15,000 + 12,000)
Profits before Interest & Tax	= 2,27,000

Interest Coverage Ratio = $\frac{2,27,000}{27,000}$ = 8.4 times

Working Note: Net Profit before Interest and Tax = ₹1,20,000 × $\frac{100}{60}$ = ₹2,00,000

(ii) After purchase of goods on credit:

Current Assets = ₹3,00,000 + ₹20,000 = ₹3,20,000

Current Liabilities = ₹1,40,000 + ₹20,000 = ₹1,60,000

Current Ratio = $\frac{3,20,000}{1,60,000}$ = 2 : 1

2. Operating Profit Ratio = $\frac{\text{Operating Profit}}{\text{Net Revenue from Operations}} \times 100$

Net Revenue from Operations = ₹4,00,000 – ₹15,000 = ₹3,85,000

Cost of Revenue from Operations = Opening Stock + Purchases – Purchase return – Closing Stock

= ₹ (10,000 + 1,20,000 – 5,000 – 60,000)

= ₹65,000

Gross Profit = Net Revenue from Operations – Cost of Revenue from Operations

= ₹3,85,000 – ₹65,000 = ₹3,20,000

Operating Expenses= Selling Expenses + Administrative Expenses

= ₹70,000 + ₹40,000 = ₹1,10,000

Operating Profit = Gross Profit – Operating Expenses

= ₹3,20,000 – ₹1,10,000 = ₹2,10,000

Operating Profit Ratio = $\frac{₹2,10,000}{₹3,85,000} \times 100 = 54.55\%$

3. (a) Total Assets = Total Debts + Shareholders' Funds

= ₹3,60,000 + ₹1,60,000

= ₹5,20,000

Long-term Debts = Total Debts – Current Liabilities
= ₹3,60,000 – ₹40,000
= ₹3,20,000

$$\text{Total Assets to Debt Ratio} = \frac{\text{Total Assets}}{\text{Long – term Debts}}$$

$$= \frac{₹5,20,000}{₹3,20,000} = 1.625 : 1$$

(b) Let the amount of Current Liabilities to be paid = x

$$\frac{2}{1} = \frac{₹6,00,000 - x}{₹4,00,000 - x}$$

₹8,00,000 – 2x = ₹6,00,000 – x
2x – x = ₹8,00,000 – ₹6,00,000
x = ₹2,00,000
Current Liabilities of ₹2,00,000 should be paid off to obtain current ratio of 2 : 1.

4. $$\text{Average Inventory} = \frac{\text{Opening Inventory + Closing Inventory}}{2} = \frac{₹1,60,000}{2}$$

= ₹80,000

$$\text{Inventory Turnover Ratio} = \frac{\text{Cost of Revenue from Operations}}{\text{Average Inventory}}$$

$$8 = \frac{\text{Cost of Revenue from Operations}}{₹80,000}$$

Cost of Revenue from Operations = ₹6,40,000
Gross Profit = 25% of ₹6,40,000
= ₹1,60,000
Revenue from Operations = Cost of Revenue from Operations + Profit
= ₹ 6,40,000 + ₹1,60,000
= ₹8,00,000

$$\text{Gross Profit Ratio} = \frac{\text{Gross Profit}}{\text{Revenue from Operations}} \times 100$$

$$= \frac{1,60,000}{8,00,000} \times 100$$

= 20%.

5. Suppose cost of Revenue from operations = 100
Revenue from Operations = Cost of Revenue from operations + Profit
= 100 + 20 = ₹120

$$\text{Cost of Revenue from operations} = 1,80,000 \times \frac{100}{120} = ₹1,50,000$$

$$\text{Inventory Turnover Ratio} = \frac{\text{Cost of Revenue from Operations}}{\text{Average Inventory}} = 3 \text{ times}$$

$$= \frac{1,50,000}{\text{Average Inventory}} = 3 \text{ times}$$

$$\text{Average Inventory} = \frac{1,50,000}{3} = ₹50,000$$

Total Inventory = 50,000 × 2 = ₹1,00,000
Suppose Opening Inventory = x
Closing Inventory = x – 2000

$$x + (x - 2000) = 1,00,000$$

$$2x = 1,00,000 + 2,000 = ₹1,02,000$$

$$x = \frac{1,02,000}{2} = ₹51,000 \text{ (Opening Inventory)}$$

Closing Inventory = x – 2000 = 51,000 – 2000 = ₹49,000.

6. (a) $$\text{Trade Receivables Turnover Ratio} = \frac{\text{Net Credit Revenue from Operations}}{\text{Average Trade Receivables}}$$

$$= \frac{₹9,00,000 - ₹1,00,000}{\frac{₹83,000 + ₹1,17,000}{2}} = \frac{8,00,000}{1,00,000} = 8 \text{ times}$$

(b) $$\text{Trade Receivables Turnover Ratio} = \frac{\text{Net Credit Revenue from Operations}}{\text{Average Trade Receivables}}$$

$$= \frac{27,01,000}{4,44,000} = 6.08 \text{ times}$$

$$\text{Average Collection Period} = \frac{\text{Days in year}}{\text{Trade Receivables Turnover Ratio}}$$

$$= \frac{365}{6.08} = 60 \text{ days.}$$

Note: *Here, Trade Receivables are assumed to be Average Trade Receivables.*

7. Net Credit Purchases = Total Purchases – Cash Purchases – Purchases Returns
= ₹4,07,000 – ₹1,00,000 – ₹7,000

= ₹3,00,000

Average Trade Payable = (Opening Trade Payables + Closing Trade Payables)/2

= (₹25,000 + ₹20,000 + ₹50,000 + ₹25,000)/2

= ₹60,000

$$\text{Trade Payables Turnover Ratio} = \frac{\text{Net Credit Purchases}}{\text{Average Trade Payables}}$$

$$= \frac{₹3,00,000}{₹60,000} = 5 \text{ times}$$

$$\text{Average Debt Payment Period} = \frac{12 \text{ Months}}{\text{Trade Payables Turnover Ratio}}$$

$$= \frac{12}{5} = 2.4 \text{ months.}$$

Note: *The creditors for furniture and typewriter have been excluded since they do not arise from the purchases of goods in which the enterprise deals in.*

8. (i) $\text{Gross Profit Ratio} = \frac{\text{Gross Profit}}{\text{Revenue from Operations}} \times 100$

Gross Profit = Revenue from Operations — Cost of Revenue from Operations

= Revenue from Operations — (Opening Inventory + Purchases + Wages + Carriage Inwards — Closing Inventory)

= 24,00,000 – (3,00,000 + 14,00,000 + 3,70,000 + 1,50,000 – 4,20,000)

= 24,00,000 – 18,00,000

= ₹6,00,000

$$\text{Gross Profit Ratio} = \frac{6,00,000}{24,00,000} \times 100 = 25\%$$

(ii) $\text{Operating Ratio} = \frac{\text{Cost of Revenue from Operations + Operating Expenses}}{\text{Revenue from Operations}} \times 100$

Operating Expenses = Administrative Expenses + Selling Expenses

= 84,000 + 36,000

= ₹1,20,000

$$\text{Operating Ratio} = \frac{18,00,000 + 1,20,000}{24,00,000} \times 100 = 80\%$$

(iii) $\text{Inventory Turnover Ratio} = \frac{\text{Cost of Revenue from Operations}}{\text{Average Inventory}}$

$$\text{Average Inventory} = \frac{3,00,000 + 4,20,000}{2} = ₹3,60,000$$

$$\text{Inventory Turnover Ratio} = \frac{18,00,000}{3,60,000} = 5 \text{ times.}$$

9. $\text{Net Profit Ratio} = \frac{\text{Net Profit before/after Tax}}{\text{Revenue from operations (Net Sales)}} \times 100$

$$\text{Net Profit Ratio (Before Tax)} = \frac{18,200}{1,20,600} \times 100$$

$$= 15.09\%$$

$$\text{Net Profit Ratio (After Tax)} = \frac{9,100}{1,20,600} \times 100 = 7.55\%$$

10. (a) $\text{Net Profit Ratio} = \frac{\text{Net Profit}}{\text{Revenue from Operations}} \times 100$

Net Profit = Gross Profit — All Indirect Expenses and Losses + All Incomes

= ₹75,000 - ₹15,000 - ₹26,000 - ₹5,000 - ₹12,000 + ₹2,500 = ₹19,500

Revenue from Operations = ₹2,00,000

$$\therefore \text{Net Profit Ratio} = \frac{₹19,500}{₹2,00,000} \times 100 = 9.75\%$$

(b) $\text{Operating Profit Ratio} = \frac{\text{Operating Profit}}{\text{Revenue from Operation}} \times 100$

Operating Profit = Gross Profit — Operating Expenses

= ₹75,000 — ₹15,000 — ₹26,000 = ₹34,000.

Revenue from Operations = ₹2,00,000

$$\therefore \text{Operating Profit Ratio} = \frac{₹34,000}{₹2,00,000} \times 100 = 17\%.$$